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FINAL

SUMMARY REPORT

DOT&PF Statewide PFAS  
Addendum 004-HOM-01  
Initial Site Characterization  
HOMER, ALASKA

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Submitted To: Alaska Department of Transportation & Public Facilities  
PO Box 196900  
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Attn: Michael Cook

Subject: FINAL SUMMARY REPORT, DOT&PF STATEWIDE PFAS ADDENDUM 004-HOM-01  
INITIAL SITE CHARACTERIZATION REPORT, HOMER, ALASKA

Shannon & Wilson prepared this draft report to summarize initial site characterization activities at the Homer Airport (HOM) in Homer, Alaska. Our scope of services was specified in our General Work Plan (GWP) Addendum dated March 16, 2021 and authorized on March 26, 2021 by Alaska Department of Transportation & Public Facilities (DOT&PF) under our *Professional Services Agreement Number 25-19-1-013 Per- and Polyfluoroalkyl Substance (PFAS) Related Environmental & Engineering Services*. The services were conducted June 2021 on behalf of the DOT&PF.

We appreciate the opportunity to be of service to you on this project. If you have questions concerning this report, or we may be of further service, please contact us.

Sincerely,

SHANNON & WILSON, INC.

Ashley Jaramillo  
Project Manager/Senior Chemist

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AMJ:KRF:CBD/amj

## EXECUTIVE SUMMARY

Aqueous film forming foam (AFFF) was used for aircraft rescue firefighting (ARFF) training and systems testing at the Homer Airport (HOM) for many years. Annual AFFF systems testing was required to maintain Federal Aviation Administration (FAA) certification. Prior to 2019, FAA inspections required the release of AFFF to ground surface; a small amount of AFFF would be discharged so the inspector could visually confirm the foam consistency. AFFF training activities at HOM likely occurred twice per year at two training areas beginning in the 1970s, and at least once per year at various locations along the HOM runways. There are no known emergency response incidents at the HOM where AFFF was used. The precise timeline and locations of AFFF use are currently unknown.

The purpose of this project was to sample surface and subsurface soil, surface sediment, surface water, and groundwater at and near the HOM along with water supply wells downgradient of the HOM. The objective of this initial site characterization effort was to understand the extent of per- and polyfluoroalkyl substances (PFAS) contamination, if present, resulting from the historic use of AFFF by the DOT&PF at the HOM. Site characterization activities were conducted in accordance with the *Revision 1 004-HOM-01 General Work Plan Addendum*, dated March 2021 and approved by DEC on March 23, 2021.

In June of 2021, Shannon & Wilson, Inc. (S&W) staff traveled to Homer to perform initial site characterization activities at the HOM. S&W staff collected petroleum analytical samples from the HOM for analysis of gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), and PFAS. PFAS samples were sent to Eurofins TestAmerica in West Sacramento, California and petroleum samples were sent to SGS North America in Anchorage, Alaska.

Soil and sediment results were compared to the most conservative of either the migration to groundwater or human health cleanup levels listed in 18 AAC 75.341 *Tables B1 Method Two and B2, Method Two – Under 40-inch*. Groundwater and surface water samples were compared to 18 AAC 75.345 *Table C, Groundwater Cleanup Level*. Water supply well samples were compared to the EPA lifetime health advisory (LHA) level and DEC drinking water action level of 70 nanograms per liter (ng/L) for perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA), or the sum of the two.

PFOS and PFOA were detected above their respective regulatory levels in surface soil. PFOS was also detected above its regulatory level in surface water and sediment samples.

PFOS and PFOA contamination is believed to be associated with AFFF training and testing activities. PFOS and PFOA were not detected above their respective regulatory limits in groundwater samples collected from on and off airport property or from hydraulically down-gradient water supply wells.

DRO were detected above the respective regulatory level in surface soil collected from a known historical AFFF training and testing area. DRO contamination may have resulted from a fuel spill(s) or used during training exercises. RRO were detected above the respective regulatory level in groundwater collected from and adjacent to known historical AFFF training and testing area. GRO, BTEX, and PAHs were not detected in above their respective regulatory level in project samples.

S&W recommends conducting further site characterization activities at the HOM. We recommend further delineation of the vertical and horizontal extent of PFAS at the HOM, and petroleum analytes in historic fire training areas by conducting additional surface and shallow subsurface soil, groundwater, surface water, and/or sediment sampling in the vicinity of regulatory exceedances. These recommendations are based on site conditions observed at the HOM at the time of our field activities, the results of testing performed on samples collected from the site, publicly available literature and data reviewed for this project, our understanding of the project, and information provided by the DOT&PF and other members of the project team.

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## ACRONYMS

AAC	Alaska Administrative Code
AFFF	aqueous film-forming foam
ARFF	aircraft rescue firefighting
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
City	City of Homer
COPC	contaminant of potential concern
CSM	conceptual site model
DEC	Alaska Department of Environmental Conservation
DOT&PF	Alaska Department of Transportation & Public Facilities
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
GAC	granulated activated carbon
GRO	gasoline range organics
GWP	General Work Plan
HOM	Homer Airport
LDRC	laboratory data review checklist
LHA	lifetime health advisory
mg/kg	milligrams per kilogram
ng/L	nanograms per liter
PAH	polycyclic aromatic hydrocarbons
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PID	photoionization detector
ppm	parts per million
QA/QC	quality assurance/quality control
RRO	residual range organics
S&W	Shannon & Wilson, Inc.
SGS	SGS North America
TestAmerica	Eurofins TestAmerica Laboratories, Inc.
TWP	temporary well point
µg/L	micrograms per liter



# 1 INTRODUCTION

Shannon & Wilson, Inc. has prepared this report to summarize the June 2021 initial site characterization activities associated with the historical use and testing of aqueous film-forming foam (AFFF) at the Homer Airport (HOM) in Homer, Alaska (Figure 1).

This report was prepared for the Alaska Department of Transportation & Public Facilities (DOT&PF) in accordance with the terms and conditions of our contract, relevant Alaska Department of Environmental Conservation (DEC) guidance documents, and 18 Alaska Administrative Code (AAC) 75.335.

## 1.1 Background

Homer is located on the southern end of the Kenai Peninsula on the north side of Kachemak Bay (Figure 1). The HOM is located at 2320 Kachemak Drive in Homer, Alaska. The HOM property boundaries for land owned by DOT&PF are shown on Figure 2. The geographic coordinates of the HOM terminal are latitude 59.6449, longitude -151.4858.

### 1.1.1 Aircraft Rescue and Firefighting

AFFF was used for aircraft rescue firefighting (ARFF) training and systems testing at the HOM for many years. Annual AFFF systems testing was required to maintain Federal Aviation Administration (FAA) certification. Prior to 2019, FAA inspections required the release of AFFF to ground surface; a small amount of AFFF would be discharged so the inspector could visually confirm the foam consistency. AFFF training activities at HOM likely occurred twice per year at two training areas (Figure 2) beginning in the 1970s, and at least once per year at various locations along the HOM runways. There are no known emergency response incidents at the HOM where AFFF was used. The precise timeline and locations of AFFF use are currently unknown.

### 1.1.2 Groundwater and Drinking Water

Groundwater in Homer is derived from the infiltration of rain, snow melt, and surface water bodies. Groundwater depths near Homer vary from just below the ground surface (bgs) to more than 3,200 meters bgs (Waller, 1963). Two aquifers are present in Homer, a bedrock aquifer and an unconfined aquifer within surficial deposits of Quarternary age (Waller, 1968). The unconfined aquifer is bounded on the south and east by Kachemak Bay, on the north by bedrock ridges and streams, and on the west by Cook Inlet. The general flow of groundwater in Homer is to the south towards Kachemak Bay.

Generally, groundwater in Homer is unsuitable for residential and commercial use due to low yields, shallow depth bgs, and presence of saltwater. The City of Homer (City) Department of Public Works provides public drinking water and sewer services to the City and surrounding area. The drinking water source is the Bridge Creek Reservoir, located approximately 2 miles north of the HOM; the reservoir is the only water source provided by the City. City water is available on the HOM and along the downgradient Kachemak Drive. Private wells and water hauling may augment the City supply.

### 1.1.3 Storm Water Drainage

According to the HOM's Multi Sector General Permit Storm Water Pollution Prevention Plan, storm water at the site is generally directed towards vegetated areas, wetland complexes, Beluga Lake, or two outfalls leading to Kachemak Drive (Figure 2).

## 1.2 Purpose and Objectives

The purpose of this project was to sample surface and subsurface soil, surface sediment, surface water, and groundwater at and near the HOM along with water supply wells downgradient of the HOM. The objective of this initial site characterization effort was to understand the extent of per- and polyfluoroalkyl substances (PFAS) contamination, if present, resulting from the historic use of AFFF by the DOT&PF at the HOM.

## 1.3 Contaminants of Potential Concern and Action Levels

The primary contaminants of potential concern (COPCs) are PFAS, specifically perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). We requested 18 PFAS analytes be analyzed for the project samples; however, only PFOS and PFOA are currently regulated with established cleanup levels.

Appendix F of DEC's *Field Sampling Guidance* also identifies the following additional COPCs for sites associate with fire training facilities, fires, and facilities where AFFF was used: gasoline range organics (GRO); diesel range organics (DRO); residual range organics (RRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); and polycyclic aromatic hydrocarbons (PAHs).

Soil and sediment results were compared to the most conservative of either the migration to groundwater or human health cleanup levels listed in 18 AAC 75.341 *Tables B1 Method Two and B2, Method Two – Under 40-inch*. Groundwater and surface water samples were compared to 18 AAC 75.345 *Table C, Groundwater Cleanup Level*. Water supply well samples were compared to the U.S. Environmental Protection Agency (EPA) lifetime health advisory

(LHA) level and DEC drinking water action level of 70 nanograms per liter (ng/L) for PFOS, PFOA, or the sum of the two. Cleanup levels for site COPCs are summarized in Exhibit 1-1.

**Exhibit 1-1: Applicable Regulatory and Action Levels**

Compound	Media	
	Soil/Sediment (mg/kg) <sup>1</sup>	Water (µg/L) <sup>2</sup>
<b>PFAS Analytes</b>		
PFOS	0.0030	0.4
PFOA	0.0017	0.4
<b>Petroleum Analytes</b>		
GRO	300	2,200
DRO	250	1,500
RRO	10,000*	1,100
Benzene	0.022	4.6
Toluene	6.7	1,100
Ethylbenzene	0.13	15
Xylenes, Total	1.5	190
1-Methylnaphthalene	0.41	11
2-Methylnaphthalene	1.3	36
Acenaphthene	37	530
Acenaphthylene	18	260
Anthracene	390	43
Benzo(a)anthracene	0.7	0.30
Benzo[a]pyrene	1.9	0.25
Benzo[b]fluoranthene	15*	2.5
Benzo[g,h,i]perylene	2,300*	0.26
Benzo[k]fluoranthene	150*	0.8
Chrysene	600	2.0
Dibenzo[a,h]anthracene	1.5*	0.25
Fluoranthene	590	260
Fluorene	36	290
Indeno[1,2,3-c,d]pyrene	15*	0.19
Naphthalene	0.38	1.7
Phenanthrene	39	170
Pyrene	87	120

NOTES:

- 1 18 ACC 75 Table B2. Method Two – Petroleum Hydrocarbon Soil Cleanup Levels – Under 40-Inch Zone or Table B1. Method Two – Soil Cleanup Level Table. The most stringent between Human Health and Migration to Groundwater cleanup levels are reported. Migration to Groundwater cleanup level reported unless otherwise identified.
- 2 18 ACC 75 Table C. Groundwater Cleanup Levels.
- 3 DEC Technical Memorandum, Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water.
- \* 18 AAC 75 Table B1 and B2 Human Health cleanup level reported.

AAC = Alaska Administrative Code; DEC = Alaska Department of Environmental Conservation; DRO = diesel range organics; GRO = gasoline range organics; µg/L = micrograms per liter; mg/kg = milligrams per kilogram; PFAS = per- and polyfluoroalkyl substances; PFOA = perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid; RRO = residual range organics

## 1.4 Scope of Services

The scope of services summarized in this report include implementation of the August 2020 *Revision 1 DOT&PF Statewide PFAS General Work Plan (GWP)* and the March 2021 *Revision 1 DOT&PF Statewide PFAS Addendum 004-HOM-01 Initial Site Characterization (Work Plan)*.

Activities included:

- Field screening using a photoionization detector (PID);
- Collection of 21 primary and 2 field-duplicate surface soil samples;
- Collection of 2 primary sediment samples;
- Collection of 18 primary and 1 field-duplicate subsurface soil samples;
- Collection of 7 primary surface water samples;
- Collection of 6 primary and 1 field-duplicate groundwater samples;
- Collection of 3 primary and 1 field-duplicate water supply well samples;
- Laboratory analysis for the above listed samples for PFAS and/or petroleum; and
- Evaluation and reporting of the analytical data.

The field activities described in this summary report revolve around DOT&PF's request for initial site characterization of the HOM.

This report was prepared for the exclusive use of the DOT&PF and its representatives. This work presents our professional judgment as to the conditions of the site. Information presented here is based on the sampling and analyses we performed. This report should not be used for other purposes without our approval or if any of the following occurs:

- Project details change, or new information becomes available, such as revised regulatory levels or the discovery of additional source areas.
- Conditions change due to natural forces or human activity at, under, or adjacent to the project site.
- Assumptions stated in this report have changed.
- If the site ownership or land use has changed.
- Regulations, laws, or cleanup levels change.
- If the site's regulatory status has changed.

If any of these occur, we should be retained to review the applicability of our recommendations. This report should not be used for other purposes without Shannon & Wilson's review. If a service is not specifically indicated in this report, do not assume it was performed.

## 2 FIELD ACTIVITIES

This section summarizes the site characterization field activities performed during June of 2021. The following Shannon & Wilson personnel collected analytical samples for this project. These individuals are State of Alaska Qualified Samplers per 18 AAC 75.333[b] and 18 AAC 78.088[b]. Staff resumes are included in Appendix A.

- Adam Wyborny, Environmental Engineer, PE
- Morgen Donohue, Environmental Staff/Scientist

Field personnel are aware of the potential for cross-contamination of PFAS from numerous everyday items. Appropriate precautions were taken to prevent cross-contamination, including discontinuing the use of personal protection equipment and field supplies known to contain PFAS, hand washing, and donning a fresh pair of disposable nitrile gloves before sample collection. Additionally, samples were collected in laboratory-supplied, high-density polyethylene containers to prevent PFAS from adhering to the container.

Analytical samples were submitted for the following analyses, as applicable:

- PFAS
  - 18 PFAS by EPA Method 537(Mod);
- Petroleum Analytes
  - GRO, DRO, and RRO by Alaska Methods AK101, AK102, and AK103, respectively;
  - BTEX by EPA Method SW8260D; and,
  - PAHs by EPA Method 8270D SIM.

Field forms are included in Appendix B and soil boring logs are included in Appendix C.

In general, during the site characterization event, samples were collected following the procedures outlined in the GWP, with any deviations noted in Section 2.10 below.

### 2.1 Site Preparation

Shannon & Wilson field staff coordinated with HOM DOT&PF staff prior to the start of field activities to identify locations where AFFF is known or suspected to have been historically tested or used. Shannon & Wilson field staff confirmed the location of two known AFFF testing areas, one to the southeast of the terminal apron and the other to the northeast of the general aviation apron area along the southern edge of the HOM (Figure 2).

## 2.2 Field Screening

One to five field-screening samples were collected from each of the nine subsurface borings for a total of 31 field-screening samples for the site. Field screening was accomplished using the heated headspace method and measured with a PID, as detailed in the Work Plan. Field screening samples were collected at depths between approximately 0 and 25 feet bgs. Field screening readings were less than 20 parts per million (ppm).

## 2.3 Surface Soil Sampling

Surface soil samples were collected just below vegetation, if present, and between 0.5-foot and 1-foot bgs if not present. A shovel or trowel was used to dig to the target depth, then a new, disposable stainless-steel spoon was used to fill the laboratory-provided sample jars.

Surface soil samples were collected from the locations shown in Figure 3, including each boring/temporary well point (TWP). Surface soil samples were analyzed for PFAS. Two sample locations (*HOM5* and *HOM6*) were also sampled for petroleum analytes.

## 2.4 Subsurface Soil Sampling

Subsurface soil samples were collected from soil borings between 5- to 19-foot bgs using a Geoprobe 6010 DT to drill to the target depth, then a new, stainless-steel spoon to fill the laboratory provided sample jars.

Subsurface soil samples were collected from the locations shown in Figure 4. Subsurface soil samples were analyzed for PFAS. Three sample locations (*HOM5*, *HOM6* and *HOM11*) were also sampled for petroleum analytes.

## 2.5 Surface Water Sampling

Surface water samples were collected from standing water within the HOM property (e.g., drainage ditches next to the runway), as well as from the shore of Beluga Lake and Lampert Lake, as shown in Figure 5. The Beluga Lake and Lampert Lake samples were collected near where stormwater from the HOM is known to discharge into the lakes. Surface water samples were analyzed for PFAS.

## 2.6 Sediment Sampling

Sediment samples were collected from the collocated surface water samples collected from Beluga Lake and Lampert Lake, Figure 3. Sediment samples were analyzed for PFAS.

## 2.7 Groundwater Sampling

Groundwater samples were collected from TWP's installed in borings advanced with a Geoprobe (as described in Section 2.4). The wells were screened between 0- to 20-feet bgs depending on the depth at which groundwater was encountered during drilling at each location. Samples were also collected from two existing FAA wells located at the southwest end of the HOM in a storage area for privately owned planes.

Depth to groundwater was measured using an electronic water level indicator prior to purging and sample collection. Wells were purged using a low-flow peristaltic pump until either field parameters stabilized (temperature, dissolved oxygen, conductivity, pH, oxidation-reduction potential, and water clarity) or greater than three well volumes were purged.

Groundwater samples were collected from the monitoring well, and TWP locations shown in Figure 5. Groundwater samples were analyzed for PFAS. Three sample locations (*FAA-MW-2*, *HOM5* and *HOM6*) were also sampled for petroleum analytes.

## 2.8 Water Supply Well Sampling

During the water supply well survey, three privately-owned wells were identified south and southeast of HOM on properties located along Kachemak Drive (Figure 5). The wells varied in depth from approximately 8- to 49-feet bgs. These wells are not currently being used for drinking water and are not connected to indoor plumbing, however, are considered potential future use wells based on owner comments and are considered Category 2 wells. Water supply well samples were analyzed for PFAS.

## 2.9 Investigation Derived Waste

Excess soil was not generated during sampling. Soils collected for field-screening purposes did not exceed 20 ppm on the PID and therefore were spread in the immediate surroundings of the boring location from which they originated. Decontamination fluid was run through a granulated activated carbon (GAC) filter before being discharged at least 100 feet from drainage ditches or surface water bodies. An effluent sample was collected following completion of sampling. Purge water from water supply well samples was purged to the adjacent ground surface.

Other investigation derived wastes included non-reusable equipment such as nitrile gloves and pump tubing, which were disposed of in an onsite dumpster. We understand the contents of the onsite dumpster are then moved to the Homer Transfer Facility.

## 2.10 Deviations from the Work Plan

In general, we conducted our services in accordance with the GWP and the Work Plan, except for the following deviations:

- Several planned sample locations along FAA Road and Kachemak Drive were moved inside and along the HOM boundary fence due to a lack of sufficient space along the roads to safely collect samples. Final sample locations are shown on Figure 3 through Figure 5.
- The Work Plan states that 10 soil borings will be advanced, but only nine were advanced. One proposed location was determined to be underlain primarily by road construction fill rather than native material. Final boring locations are shown on Figure 4.
- The Work Plan states that TWP's will be installed at 10 planned soil boring locations. Due to unexpectedly deep groundwater levels (greater than 20- to 25-foot bgs) in some borings, TWP's were only installed in 4 borings. Final TWP locations are shown on Figure 5.
- Two existing FAA groundwater monitoring wells were identified, during site preparation, at the southwest end of the HOM fenced area and sampled. Final groundwater sample locations are shown are Figure 5.
- TWP Sampling Logs were used to record water supply well sampling activities instead of Water Supply Well Sampling Logs.

## 3 ANALYTICAL RESULTS

Analytical samples collected for this project were submitted to Eurofins TestAmerica Laboratories, Inc. (TestAmerica) in Sacramento, California, for determination of PFAS analyses, and SGS North America (SGS) in Anchorage, Alaska, for determination of GRO, DRO, RRO, BTEX, and PAHs, where applicable. The laboratories maintain current certifications approved by DEC Contaminated Sites to conduct the requested analyses.

Analytical results are presented in Table 1 through Table 5 based on sample matrix. Location specific analytical result summaries are included in Table 6 and Table 7.

The analytical laboratory reports and corresponding DEC Laboratory Data Review Checklists (LDRCs) are included in Appendix D. A quality assurance/quality control (QA/QC) summary of the analytical results is provided in Appendix E.

Soil and sediment results were compared to the most conservative of either the migration to groundwater or human health cleanup levels listed in 18 AAC 75.341 *Tables B1 Method Two*



and B2, Method Two – Under 40-inch. Groundwater and surface water samples were compared to 18 AAC 75.345 Table C, Groundwater Cleanup Level. Water supply well samples were compared to the EPA LHA level and DEC drinking water action level of 70 ng/L for PFOS, PFOA, or the sum of the two.

### 3.1 Surface Soil Samples

We collected 21 surface soil samples and 2 field duplicates from the site. Surface soil analytical sample results are detailed in Table 3 (petroleum) and Table 4 (PFAS), and Figure 6. The following analytes were detected above their respective regulatory levels.

- PFAS
  - PFOS: *HOM1-SS, HOM4-SS, HOM5-SS, HOM11-SS, HOM13-SS, HOM19-SS*
  - PFOA: *HOM5-SS*
- Petroleum
  - DRO: *HOM5-SS*

### 3.2 Subsurface Soil Samples

We collected 18 subsurface soil samples and one field duplicate from the site. Subsurface soil analytical sample results are detailed in Table 3 (petroleum) and Table 4 (PFAS), and Figure 6. No PFAS or petroleum analytes were detected above their respective regulatory levels.

### 3.3 Sediment Samples

We collected two sediment samples and one field duplicate from the site. Sediment sample analytical results for PFAS are detailed in Table 4 and Figure 6. The following analyte was detected above the respective regulatory level.

- PFAS
  - PFOS: *BL-SED*

### 3.4 Surface Water Samples

We collected seven PFAS surface water samples from the site. Surface water analytical sample results are detailed in Table 2 and Figure 7. The following analyte was detected above the respective regulatory level.

- PFAS
  - PFOS: *HOM-SW-2*

### 3.5 Groundwater Samples

We collected six groundwater samples and one field duplicate from the site. Groundwater analytical sample results are detailed in Table 1 and Figure 7. The following analyte was detected above the respective regulatory level.

- Petroleum
  - RRO: *HOM6-GW*

### 3.6 Water Supply Well Water Samples

We collected three water supply well samples and one field duplicate. Water supply well analytical results are detailed in Table 5 and Figure 8. No analytes were detected above their respective regulatory levels.

### 3.7 GAC Effluent Sample

No analytes were detected above their respective regulatory levels in the GAC effluent sample.

## 4 UPDATED CONCEPTUAL SITE MODEL

The preliminary conceptual site model (CSM) presented in our Work Plan has been updated to incorporate analytical results obtained as a part of field work. The DEC CSM scoping form and graphic form are presented in Appendix F.

## 5 DISCUSSION

The objective of this initial site characterization effort was to understand the extent of PFAS contamination, if present, resulting from the historic use of AFFF by the DOT&PF at the HOM. We present the following sections as a discussion of the results.

### 5.1 PFAS

PFOS and/or PFOA were detected above their respective regulatory levels in surface soil collected near known historical AFFF training and testing areas (*HOM5* and *HOM11*), Figure 6. Associated subsurface soil and groundwater samples did not contain PFAS regulatory exceedances (Table 4 and Table 6), indicating that contamination is likely localized to the near surface soils. PFOS and PFOA contamination is believed to be associated with AFFF training and testing activities.

PFOS was also detected above its regulatory level in three additional surface soil samples (*HOM1*, *HOM4*, and *HOM13*) and one surface water sample (*HOM-SW-2*), Figure 6 and Figure 7. Pre-sampling discussions with HOM personnel indicated historical AFFF training and testing may have occurred along the runway but locations for said training were not known. These PFOS exceedances may indicate locations where AFFF training and/or testing occurred. It is also possible that these exceedances correspond to instances where AFFF was deployed for firefighting purposes (e.g., a plane fire or crash), although this is considered less likely as HOM personnel did not know of incidents where AFFF was used for this purpose.

PFOS was also detected above the regulatory level in surface soil sample *HOM19-SS* and surface sediment sample *BL-SED*, Figure 6. The surface soil sample was collected in a low-lying area that conveys stormwater from the HOM towards Beluga Lake. The sediment sample was collected from Beluga Lake near where stormwater from the HOM is known to discharge into the lake. PFOS was detected in the corresponding surface water sample (*BL-SW*) at a concentration below the regulatory limit (Table 2). These results indicate PFAS contamination is likely moving with stormwater via preferential flow pathways towards Beluga Lake.

PFOS and PFOA were not detected above their respective regulatory limits in groundwater samples collected from on and off airport property or from hydraulically down-gradient water supply wells.

## 5.2 Petroleum

DRO were detected above the respective regulatory level in surface soil sample *HOM5-SS* collected from a known historical AFFF training and testing area to the southeast of the HOM terminal (Figure 6). Associated subsurface soil and groundwater samples did not contain regulatory exceedances for DRO, indicating that contamination may be localized to the near soil surface. However, RRO were detected in a nearby groundwater sample *HOM6-GW*. Given the proximity to the HOM terminal (including airplane fuel storage areas), DRO and RRO contamination may have resulted from a fuel spill(s) or used during training exercises.

# 6 RECOMMENDATIONS

Based on the initial site characterization activities described in this report we recommend a GWP Addendum for further site characterization be prepared for review and approval by DEC to include the following:

- Delineation of the of the vertical and horizontal extent of PFAS at the HOM, and petroleum analytes in historic fire training areas by conducting additional surface and shallow subsurface soil, groundwater, surface water, and/or sediment sampling in the vicinity of regulatory exceedances.
- Preparation and use of a contaminated materials management plan during construction activities where contaminated materials are disturbed.

Our recommendation is based on:

- The results of testing performed on soil, water, and sediment samples collected from the site and adjacent or nearby properties.
- Publicly available literature and data we reviewed for this project.
- Our understanding of the project and information provided by the DOT&PF, and other members of the project team.
- The limitations of our approved scope described in the GWP and Work Plan Proposed Scope of Services.

The information included in this report is based on limited sampling and should be considered representative of the times and locations at which the sampling occurred. Regulatory agencies may reach different conclusions than Shannon & Wilson. We have prepared and included in, "Important Information about your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of this report.

## 7 REFERENCES

Alaska Department of Environmental Conservation (DEC), 2017, Guidance on Developing Conceptual Site Models.

Alaska Department of Environmental Conservation (DEC), 2019a, 18 AAC 78, Underground Storage Tanks: Juneau, Alaska, September, available: <http://dec.alaska.gov/commish/regulations>.

Alaska Department of Environmental Conservation (DEC), 2019d, Field Sampling Guidance for Contaminated Sites and Leaking Underground Storage Tanks: Juneau, Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, October, available: [http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).

Alaska Department of Environmental Conservation (DEC), 2019b, Technical Memorandum, Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water, October, available: <https://dec.alaska.gov/>.

- Alaska Department of Environmental Conservation (DEC), 2020, General Work Plan, DOT&PF statewide PFAS; prepared for DOT&PF by Shannon & Wilson, Inc., July, available: <https://dec.alaska.gov/>.
- Alaska Department of Environmental Conservation (DEC), 2021, 18 AAC 75, Oil and Other Hazardous Substances Pollution Control: Juneau, Alaska, June, available: <http://dec.alaska.gov/commish/regulations>.
- Shannon & Wilson, Inc., 2021, General Work Plan Addendum, DOT&PF Statewide PFAS Addendum 004-HOM-01 Initial Site Characterization, Homer, Alaska: Prepared March.
- Waller, R.M., 1963, Data on wells in the Homer area, Alaska: Alaska Department of Health and Welfare Hydrological Data 23, 24 p.
- Waller, R.M., Feulner, A.J., and Morris, D.A., 1968, Water Resources and Surficial Geology of the Homer Area, South Central Alaska: U.S. Geological Survey Hydrologic Investigations Atlas HA-187.

Table 1 - June 2021 Groundwater Analytical Summary

Analytical Method	Analyte	Regulatory Limit	Units	FAA-MW-1	FAA-MW-2	HOM5-GW		HOM6-GW	HOM14-GW	KD3-GW
				FAA-MW-1	FAA-MW-2	HOM5-GW	HOM5D-GW	HOM6-GW	HOM14-GW	KD3-GW
AK101	Gasoline Range Organics	2.2	mg/L	—	<0.0500	<0.0500	<0.0500	<0.0500	—	—
AK102	Diesel Range Organics	1.5	mg/L	—	<0.588 B*	<0.577 B*	<0.588 B*	<0.612 B*	—	—
AK103	Residual Range Organics	1.1	mg/L	—	0.312 J	0.327 J*	0.482 J*	1.20	—	—
SW8260D (BTEX)	Benzene	4.6	µg/L	—	<0.200	<0.200	<0.200	<0.200	—	—
	Ethylbenzene	15	µg/L	—	<0.500	<0.500	<0.500	<0.500	—	—
	o-Xylene	190	µg/L	—	<0.500	<0.500	<0.500	<0.500	—	—
	P & M -Xylene	190	µg/L	—	<1.00	<1.00	<1.00	<1.00	—	—
	Toluene	1100	µg/L	—	<0.500	<0.500	<0.500	<0.500	—	—
	Total Xylenes	190	µg/L	—	<1.50	<1.50	<1.50	<1.50	—	—
SW8270D SIM (PAH)	1-Methylnaphthalene	11	µg/L	—	0.0294 J	<0.0240	<0.0240	<0.0240 J*	—	—
	2-Methylnaphthalene	36	µg/L	—	0.0312 J	0.0409 J	<0.0240	<0.0240 J*	—	—
	Acenaphthene	530	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Acenaphthylene	260	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Anthracene	43	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Benzo(a)anthracene	0.3	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Benzo(a)pyrene	0.25	µg/L	—	<0.0098	<0.00960	<0.00960	<0.00960 J*	—	—
	Benzo(b)fluoranthene	2.5	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Benzo(g,h,i)perylene	0.26	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Benzo(k)fluoranthene	0.8	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Chrysene	2	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Dibenzo(a,h)anthracene	0.25	µg/L	—	<0.00980	<0.00960	<0.00960	<0.00960 J*	—	—
	Fluoranthene	260	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Fluorene	290	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Indeno(1,2,3-cd)pyrene	0.19	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—
	Naphthalene	1.7	µg/L	—	0.0468 J	0.06 J	<0.0481	<0.0481 J*	—	—
Phenanthrene	170	µg/L	—	<0.0245	0.0386 J*	0.0189 J*	<0.0240 J*	—	—	
Pyrene	120	µg/L	—	<0.0245	<0.0240	<0.0240	<0.0240 J*	—	—	

**Table 1 - June 2021 Groundwater Analytical Summary**

Analytical Method	Analyte	Regulatory Limit	Units	FAA-MW-1	FAA-MW-2	HOM5-GW		HOM6-GW	HOM14-GW	KD3-GW
				FAA-MW-1	FAA-MW-2	HOM5-GW	HOM5D-GW	HOM6-GW	HOM14-GW	KD3-GW
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	ng/L	0.77 J	0.68 J	150	140	5.5	2.6	1.1 J
	Perfluorohexanoic acid (PFHxA)	NA	ng/L	0.84 J	2.4	780	660	8.4	1.0 J	1.6 J
	Perfluoroheptanoic acid (PFHpA)	NA	ng/L	<1.8	0.43 J	64	63	4.9	<1.9	0.43 J
	Perfluorononanoic acid (PFNA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	0.57 J	<1.9	<2.1
	Perfluorobutanesulfonic acid (PFBS)	NA	ng/L	<1.8	<2.1	460	470	1.5 J	0.68 J	<2.1
	Perfluorodecanoic acid (PFDA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1
	Perfluoroundecanoic acid (PFUnA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1 J*
	Perfluorododecanoic acid (PFDoA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1 J*
	Perfluorotridecanoic acid (PFTrDA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1
	Perfluorotetradecanoic acid (PFTeA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0 J*	<1.9	<2.1 J*
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	ng/L	<4.6	<5.2	<4.8	<4.9	<5.1	<4.6	<5.2 J*
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	ng/L	<4.6	<5.2	<4.8	<4.9	<5.1	<4.6	<5.2 J*
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	ng/L	<1.8	<2.1	<1.9	<2.0	<2.0	<1.9	<2.1
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	ng/L	<3.6	<4.1	<3.9	<3.9	<4.1	<3.7	<4.2
	Perfluorooctanesulfonic acid (PFOS)	400	ng/L	<1.8	<2.1	3.3	3.1	5.4	<1.9	1.0 J
	Perfluorooctanoic acid (PFOA)	400	ng/L	<1.8	<2.1	18	18	2.3	<1.9	<2.1

Notes: Results reported from Eurofins TestAmerica work order 320-75273-1 and SGS North America, Inc work order 1213521.

Regulatory limits from 18 AAC 75.345 Table C - Groundwater Cleanup Levels.

Sample *HOM5D-GW* is a field-duplicate of sample *HOM5-GW*.

NA No applicable regulatory limit exists for the associated analyte.

— Analytical sample not collected; parameter not required.

< Analyte was not detected; reported as <LOD (limit of detection) or <RL (reporting limit).

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

DEC = Alaska Department of Environmental Conservation; BTEX = benzene, toluene, ethylbenzene, and xylenes; µg/L = micrograms per liter; mg/L = milligrams per liter; ng/L = nanogram per liter; PAH = polynuclear aromatic hydrocarbons; PFAS = per- and polyfluoroalkyl substances

Table 2 - June 2021 Surface Water Analytical Summary

Analytical Method	Analyte	Regulatory Limit	Units	HOM-SW-1	HOM-SW-2	HOM-SW-3	HOM-SW-4	HOM-SW-5	BL-SW	LL-SW
				HOM-SW-1	HOM-SW-2	HOM-SW-3	HOM-SW-4	HOM-SW-5	BL-SW	LL-SW
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	ng/L	17	570	69	1.3 J	140	8.6	1.2 J
	Perfluorohexanoic acid (PFHxA)	NA	ng/L	4.3	380	100 J*	0.94 J	140	2.8	1.0 J
	Perfluoroheptanoic acid (PFHpA)	NA	ng/L	2.4	170	56	0.40 J	55	1.6 J	1.5 J
	Perfluorononanoic acid (PFNA)	NA	ng/L	0.46 J	46	10	<1.9	17	0.79 J	0.46 J
	Perfluorobutanesulfonic acid (PFBS)	NA	ng/L	4.3	58	16	0.67 J	25	1.5 J	0.33 J
	Perfluorodecanoic acid (PFDA)	NA	ng/L	<2.0	7.9	1.3 J*	<1.9	46	<2.0	<2.1
	Perfluoroundecanoic acid (PFUnA)	NA	ng/L	<2.0	1.1 J	<1.9 J*	<1.9	1.5 J	<2.0	<2.1
	Perfluorododecanoic acid (PFDoA)	NA	ng/L	<2.0	<2.0	<1.9 J*	<1.9	1.2 J	<2.0	<2.1
	Perfluorotridecanoic acid (PFTrDA)	NA	ng/L	<2.0	<2.0	<1.9	<1.9	<2.2	<2.0	<2.1
	Perfluorotetradecanoic acid (PFTeA)	NA	ng/L	<2.0	<2.0 J*	<1.9 J*	<1.9	<2.2	<2.0	<2.1
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	ng/L	<5.0	<5.0	<4.8 J*	<4.8	<5.4	<5.0	<5.4
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	ng/L	<5.0	<5.0	<4.8 J*	<4.8	<5.4	<5.0	<5.4
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	ng/L	<2.0	<2.0	<1.9	<1.9	<2.2	<2.0	<2.1
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	ng/L	<2.0	<2.0	<1.9	<1.9	<2.2	<2.0	<2.1
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	ng/L	<2.0	<2.0	<1.9	<1.9	<2.2	<2.0	<2.1
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	ng/L	<4.0	<4.0	<3.8 J*	<3.8	<4.3	<4.0	<4.3
	Perfluorooctanesulfonic acid (PFOS)	400	ng/L	7.5	<b>1,200</b>	100	<1.9	240	20	<2.1
Perfluorooctanoic acid (PFOA)	400	ng/L	2.2	240	25	<1.9	140	2.6	1.2 J	

Notes: Results reported from Eurofins TestAmerica work order 320-75273-1 and SGS North America, Inc work order 1213521.

Regulatory limits from 18 AAC 75.345 Table C - Groundwater Cleanup Levels.

Sample HOM5D-GW is a field-duplicate of sample HOM5-GW.

NA No applicable regulatory limit exists for the associated analyte.

— Analytical sample not collected; parameter not required.

< Analyte was not detected; reported as <RL (reporting limit).

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

DEC = Alaska Department of Environmental Conservation; ng/L = nanogram per liter; PAH = polynuclear aromatic hydrocarbons; PFAS = per- and polyfluoroalkyl substances



Table 3 - June 2021 Soil and Sediment Analytical Summary - Petroleum

Sample Location		HOM5			HOM6				HOM11			
Sample Name		HOM5-SS	HOM5-SUB1	HOM5-SUB2	HOM6-SS	HOM6-SUB1	HOM6D-SUB1	HOM6-SUB2	HOM11-SUB1	HOM11-SUB2		
Sample Depth		1.0	9.0	16.5	1.0	5.0	5.0	15.0	7.5	32.0		
Method	Analyte	Regulatory Limit	Units									
AK101	Gasoline Range Organics	300	mg/kg	<7.70	<2.52	<2.68 B*	<6.48 B*	<4.16 B*	<2.44	<2.94	<6.46 B*	<2.11
AK102	Diesel Range Organics	250	mg/kg	<b>450</b>	16.5 J	13.5 J	21.7 J	18.3 J	17.2 J	18.9 J	13.4 J	18.7 J
AK103	Residual Range Organics	11,000	mg/kg	5,000	68.5 J	58.6 J	190	96.5 J	82.9 J	81.3 J	<59.0	81.3 J
SW8260D (BTEX)	Benzene	0.022	mg/kg	< <b>0.0386</b>	<0.0126	<0.00670	<0.0162	<0.0104	<0.0123	<0.0147	<0.0162	<0.0106
	Ethylbenzene	0.13	mg/kg	<0.0770	<0.0252	<0.0134	<0.0324	<0.0208	<0.0245	<0.0294	<0.0323	<0.0211
	o-Xylene	1.5	mg/kg	<0.0770	<0.0252	<0.0134	<0.0324	<0.0208	<0.0245	<0.0294	<0.0323	<0.0211
	P & M -Xylene	1.5	mg/kg	<0.154	<0.0505	<0.0267	<0.0650	<0.0417	<0.0490	<0.0590	<0.0645	<0.0422
	Toluene	6.7	mg/kg	<0.0770	<0.0252	<0.0134	<0.0324	<0.0208	<0.0245	<0.0294	<0.0323	<0.0211
	Total Xylenes	1.5	mg/kg	<0.232	<0.0755	<0.0401	<0.0970	<0.0625	<0.0735	<0.0880	<0.0970	<0.0635
	1-Methylnaphthalene	0.41	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
2-Methylnaphthalene	1.3	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Acenaphthene	37	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Acenaphthylene	18	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Anthracene	390	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Benzo(a)anthracene	0.7	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Benzo(a)pyrene	1.9	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
Benzo(b)fluoranthene	20	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137	
SW8270D SIM (PAH)	Benzo(g,h,i)perylene	15000	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Benzo(k)fluoranthene	190	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Chrysene	600	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Dibenzo(a,h)anthracene	6.3	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Fluoranthene	590	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Fluorene	36	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Indeno(1,2,3-cd)pyrene	65	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Naphthalene	0.038	mg/kg	< <b>0.0855</b>	<0.0115	<0.0107	<0.0123	<0.0116	<0.0115	<0.0115	<0.0118	<0.0109
	Phenanthrene	39	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137
	Pyrene	87	mg/kg	<0.107	<0.0143	<0.0135	<0.0154	<0.0145	<0.0143	<0.0144	<0.0147	<0.0137

Notes: Results reported from SGS North America, Inc. work order 1213523.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates of samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS, respectively.

< Analyte was not detected; reported as <LOD.

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)

<Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

DEC = Alaska Department of Environmental Conservation; BTEX = benzene, toluene, ethylbenzene, and xylenes; mg/kg = milligrams per kilogram; PAH = polynuclear aromatic hydrocarbons

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		HOM1	HOM2	HOM3	HOM4		
		Sample Name		HOM1-SS	HOM2-SS	HOM3-SS	HOM4-SS	HOM4-SUB1	HOM4-SUB2
		Sample Depth		1.0	1.0	1.0	1.0	9.5	18.0
Method	Analyte	Regulatory Limit	Units						
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	1.2	<0.20	<0.18	0.28	0.039 J	<0.20
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	0.085 J	<0.20	<0.18	0.078 J	0.059 J	<0.20
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	0.042 J	<0.20	<0.18	<0.24	<0.19	<0.20
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	0.16 J	<0.20	<0.18	<0.24	<0.19	<0.20
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	0.033 J	0.049 J	<0.18	<0.24	<0.19	<0.20
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.21	<0.20	<0.18	0.42	<0.19	<0.20
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<2.1	<2.0	<1.8	<2.4	<1.9	<2.0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<2.1	<2.0	<1.8	<2.4	<1.9	<2.0
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.21	<0.20	<0.18	<0.24	<0.19	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.26	<0.25	<0.23	<0.30	<0.24	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<b>7.7</b>	<0.50	0.33 J*	<b>7.9</b>	<0.49	<0.50
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	0.11 J	<0.20	<0.18	<0.24	<0.19	<0.20

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.

Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates of samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS, respectively.

NA No applicable regulatory limit exists for the associated analyte.

< Analyte was not detected; reported as <RL (reporting limit).

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PFAS = per- and polyfluoroalkyl substances

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		HOM5			HOM6			
		Sample Name		HOM5-SS	HOM5-SUB1	HOM5-SUB2	HOM6-SS	HOM6-SUB1	HOM6D-SUB1	HOM6-SUB2
		Sample Depth		1.0	9.0	16.5	1.0	5.0	5.0	15.0
Method	Analyte	Regulatory Limit	Units							
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	12	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	2.0	0.061 J	0.078 J	<0.40	<0.22	<0.23	<0.20
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	0.73	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluorononanoic acid (PFNA)	NA	µg/kg	0.19 J	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	0.53	<0.22	0.031 J	<0.40	<0.22	<0.23	<0.20
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	0.14 J	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	0.12 J	<0.22	<0.20	0.14 J	<0.22	<0.23	<0.20
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<2.9	<2.2	<2.0	<4.0	<2.2	<2.3	<2.0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<2.9	<2.2	<2.0	<4.0	<2.2	<2.3	<2.0
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.29	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.36	<0.27	<0.25	<0.50	<0.28	<0.29	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<b>77</b>	<0.54	<0.51	<1.0	<0.560	<0.58	<0.50
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<b>2.4</b>	<0.22	<0.20	<0.40	<0.22	<0.23	<0.20

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater)  
 Samples *HOM6D-SUB1*, *HOM7D-SS*, *HOM11D-SS*, and *HOM14D-SS* are field-duplicates of samples *HOM6D-S*  
 NA No applicable regulatory limit exists for the associated analyte.  
 < Analyte was not detected; reported as <RL (reporting limit).  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  
 DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PF

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		HOM7		HOM9	HOM10	HOM11			
		Sample Name		HOM7-SS	HOM7D-SS	HOM9-SS	HOM10-SS	HOM11-SS	HOM11D-SS	HOM11-SUB1	HOM11-SUB2
		Sample Depth		1.0	1.0	1.0	1.0	1.0	1.0	7.5	32.0
Method	Analyte	Regulatory Limit	Units								
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	1.2	2.0	1.8	0.056 J
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	1.4	1.8	2.6	0.079 J
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	0.31	0.40	0.94	<0.21
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	0.17 J	0.20 J	0.20 J	<0.21
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<1.9	<2.0	<2.1	<1.9	<2.1	<2.1	<2.2	<2.1
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<1.9	<2.0	<2.1	<1.9	<2.1	<2.1	<2.2	<2.1
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.19	<0.20	<0.21	<0.19	<0.21	<0.21	<0.22	<0.21
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.24	<0.24	<0.26	<0.24	<0.26	<0.26	<0.28	<0.27
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	0.26 J*	0.33 J*	<0.52	<0.48	<b>3.7</b>	1.4	0.26 J	<0.53
Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.19	<0.20	<0.21	<0.19	0.38 J*	0.59 J*	0.57	<0.21	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater)  
 Samples *HOM6D-SUB1*, *HOM7D-SS*, *HOM11D-SS*, and *HOM14D-SS* are field-duplicates of samples *HOM6D-S*  
 NA No applicable regulatory limit exists for the associated analyte.  
 < Analyte was not detected; reported as <RL (reporting limit).  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  
 DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PF

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		HOM12	HOM13	HOM14				HOM15	HOM16
		Sample Name		HOM12-SS	HOM13-SS	HOM14-SS	HOM14D-SS	HOM14-SUB1	HOM14-SUB2	HOM15-SS	HOM16-SS
		Sample Depth		1.0	1.0	0.5	0.5	6.5	19.0	1.0	1.0
Method	Analyte	Regulatory Limit	Units								
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	<0.22	1.4	0.075 J*	0.042 J*	<0.53	<0.20 J*	<0.22	0.042 J
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.22	0.12 J	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.22	0.088 J	<0.27	<0.25	<0.53	<0.20 J*	<0.22	<0.20
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.22	0.19 J	<0.27	<0.25 J*	<0.53	<0.20 J*	<0.22	<0.20
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.22	0.051 J	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	<0.22	0.31	<0.27	<0.25 J*	<0.53	<0.20	<0.22	<0.20
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.22	0.54	<0.27	<0.25	<0.53	<0.20 J*	<0.22	<0.20
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.22	<0.21	<0.27	<0.25 J*	<0.53 J*	<0.20	<0.22	<0.20
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.22	0.057 J	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.22	<0.21	<0.27	<0.25	<0.53 J*	<0.20	<0.22	<0.20
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<2.2	<2.1	<2.7	<2.5 J*	<5.3	<2.0 J*	<2.2	<2.0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<2.2	<2.1	<2.7	<2.5	<5.3 J*	<2.0	<2.2	<2.0
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.22	<0.21	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.22	<0.21	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.22	<0.21	<0.27	<0.25	<0.53	<0.20	<0.22	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.28	<0.26	<0.33	<0.32	<0.66	<0.25 J*	<0.28	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<0.55	<b>3.8 J*</b>	<0.66	<0.63 J*	<1.3	<0.50 J*	<0.56	<0.50
Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.22	0.24	<0.27	<0.25 J*	<0.53	<0.20 J*	<0.22	<0.20	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater)  
 Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates of samples HOM6D-S

NA No applicable regulatory limit exists for the associated analyte.  
 < Analyte was not detected; reported as <RL (reporting limit).  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PF

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		HOM18	HOM19	KD1			KD2		
		Sample Name		HOM18-SS	HOM19-SS	KD1-SS	KD1-SUB1	KD1-SUB2	KD2-SS	KD2-SUB1	KD2-SUB2
		Sample Depth		1.0	1.0	3.0	11.5	15.0	0.5	6.0	18.5
Method	Analyte	Regulatory Limit	Units								
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	<0.22	0.21 J	0.040 J*	<0.21	0.50	<0.21	<0.21	0.054 J
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.22	0.079 J	<0.25	<0.21	0.13 J	<0.21	<0.21	<0.21
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	0.089 J	<0.21	<0.21	<0.21
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.22	0.040 J	<0.25	<0.21	0.085 J	<0.21	<0.21	<0.21
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	0.042 J	<0.21	<0.21	<0.21
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	<0.22	0.076 J	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<2.2	<2.2	<2.5	<2.1	<2.8	<2.1	<2.1	<2.1
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<2.2	<2.2	<2.5	<2.1	<2.8	<2.1	<2.1	<2.1
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.22	<0.22	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.27	<0.27	<0.32	<0.27	<0.35	<0.26	<0.27	<0.27
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<0.54	<b>4.5</b>	<0.63	<0.53	2.9 J*	0.42 J	<0.53	<0.54
Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.22	0.15 J	<0.25	<0.21	<0.28	<0.21	<0.21	<0.21	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater)  
 Samples *HOM6D-SUB1*, *HOM7D-SS*, *HOM11D-SS*, and *HOM14D-SS* are field-duplicates of samples *HOM6D-S*  
 NA No applicable regulatory limit exists for the associated analyte.  
 < Analyte was not detected; reported as <RL (reporting limit).  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  
 DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PF

Table 4 - June 2021 Soil and Sediment Analytical Summary - PFAS

		Sample Location		KD3			BL-SED	LL-SED	FAA1		
		Sample Name		KD3-SS	KD3-SUB1	KD3-SUB2	BL-SED	LL-SED	FAA1-SS	FAA1-SUB1	FAA1-SUB2
		Sample Depth		1.0	6.0	11.5	0.5	0.5	0.5	6.5	14.5
Method	Analyte	Regulatory Limit	Units								
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NA	µg/kg	0.10 J	<0.22	<0.22	0.57 J	<0.53	0.052 J	<0.21	<0.22
	Perfluorohexanoic acid (PFHxA)	NA	µg/kg	<0.58	<0.22 J*	<0.22 J*	<2.4	<0.53	0.058 J	<0.21	<0.22
	Perfluoroheptanoic acid (PFHpA)	NA	µg/kg	<0.58	<0.22 J*	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorononanoic acid (PFNA)	NA	µg/kg	<0.58	<0.22	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorobutanesulfonic acid (PFBS)	NA	µg/kg	<0.58	<0.22	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorodecanoic acid (PFDA)	NA	µg/kg	<0.58	<0.22	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluoroundecanoic acid (PFUnA)	NA	µg/kg	<0.58 J*	<0.22	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorododecanoic acid (PFDoA)	NA	µg/kg	<0.58	<0.22 J*	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorotridecanoic acid (PFTTrDA)	NA	µg/kg	<0.58	<0.22	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	Perfluorotetradecanoic acid (PFTeA)	NA	µg/kg	<0.58	<0.22	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NA	µg/kg	<5.8 J*	<2.2	<2.2 J*	<24	<5.3	<2.4	<2.1	<2.2
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NA	µg/kg	<5.8 J*	<2.2	<2.2	<24	<5.3	<2.4	<2.1	<2.2
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NA	µg/kg	<0.58	<0.22	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NA	µg/kg	<0.58	<0.22	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NA	µg/kg	<0.58	<0.22	<0.22	<2.4	<0.53	<0.24	<0.21	<0.22
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NA	µg/kg	<0.72	<0.27	<0.28 J*	<3.0	<0.66	<0.29	<0.27	<0.27
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<1.4	<0.55 J*	<0.56 J*	6.2 J*	<1.3	<0.59	<0.54	<0.55
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.58	<0.22 J*	<0.22 J*	<2.4	<0.53	<0.24	<0.21	<0.22

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater)  
 Samples *HOM6D-SUB1*, *HOM7D-SS*, *HOM11D-SS*, and *HOM14D-SS* are field-duplicates of samples *HOM6D-S*  
 NA No applicable regulatory limit exists for the associated analyte.  
 < Analyte was not detected; reported as <RL (reporting limit).  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ).  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.  
 DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; NA - not assigned; PF

**Table 5 - Summary of June 2021 Initial Water Supply Well Event Analytical Results for Homer, Alaska**

Analyte	EPA LHA	Units	Sample ID	DW-2		DW-3
			DW-1	Primary	Duplicate	DW-3
Address			4104 Kachemak Drive	3059 Kachemak Drive		3059 Kachemak Drive
			06/18/2021	06/18/2021	06/18/2021	06/18/2021
Perfluorohexanesulfonic acid (PFHxS)	-	ppt	<1.9	<1.9	<1.9	0.76 J
Perfluorohexanoic acid (PFHxA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluoroheptanoic acid (PFHpA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorononanoic acid (PFNA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorobutanesulfonic acid (PFBS)	-	ppt	<1.9	<1.9	<1.9	2.4
Perfluorodecanoic acid (PFDA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluoroundecanoic acid (PFUnA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorododecanoic acid (PFDoA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorotridecanoic acid (PFTrDA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorotetradecanoic acid (PFTeA)	-	ppt	<1.9	<1.9	<1.9	<1.9
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	-	ppt	<1.9	<1.9	<1.9	<1.9
N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	-	ppt	<1.9	<1.9	<1.9	<1.9
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	-	ppt	<1.9	<1.9	<1.9	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	-	ppt	<1.9	<1.9	<1.9	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Hexafluoropropylene oxide dimer acid (HFPO-DA)	-	ppt	<1.9	<1.9	<1.9	<1.9
Perfluorooctanesulfonic acid (PFOS)		ppt	<1.9	<1.9	<1.9	<1.9
Perfluorooctanoic acid (PFOA)	70+	ppt	<1.9	<1.9	<1.9	0.52 J
LHA Combined (PFOS + PFOA)	70+	ppt	n/a	n/a	n/a	0.52 J‡

**Notes:**

Results reported from Eurofins/TestAmerica, Inc. work order 320-75272-1.

Sample DW-102 is a field-duplicate of sample DW-2.

The reported units, ppt, are equivalent to nanograms per liter.

† EPA LHA level is 70 ppt for PFOS and PFOA

‡ Minimum concentration, the LHA combined concentration includes one or more result that is not detected greater than the method detection limit (MDL).

&lt; Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

J Estimated concentration, detected greater than the MDL and less than the RL. Flag applied by the laboratory.

DUP = field-duplicate; EPA = Environmental Protection Agency; LHA = Lifetime Health Advisory; ppt = parts per trillion



Table 6 - June 2021 Location Summary Petroleum Analytical Results

Analytical Method	Analyte	HOM5									
		HOM5-SS		HOM5-SUB1		HOM5-SUB2		HOM5-GW		HOM5D-GW	
		Sample Depth (ft) Surface Soil	Units	Sample Depth (ft) 9.0	Units	Sample Depth (ft) 16.5	Units	Sample Depth (ft) Groundwater	Units	Groundwater	Units
AK101	Gasoline Range Organics	<7.70	mg/kg	<2.52	mg/kg	<2.68 B*	mg/kg	<0.0500	mg/L	<0.0500	mg/L
AK102	Diesel Range Organics	<b>450</b>	<b>mg/kg</b>	16.5 J	mg/kg	13.5 J	mg/kg	<0.577 B*	mg/L	<0.588 B*	mg/L
AK103	Residual Range Organics	5,000	mg/kg	68.5 J	mg/kg	58.6 J	mg/kg	0.327 J*	mg/L	0.482 J*	mg/L
SW8260D (BTEX)	Benzene	<b>&lt;0.0386</b>	<b>mg/kg</b>	<0.0126	mg/kg	<0.00670	mg/kg	<0.200	µg/L	<0.200	µg/L
	Ethylbenzene	<0.0770	mg/kg	<0.0252	mg/kg	<0.0134	mg/kg	<0.500	µg/L	<0.500	µg/L
	o-Xylene	<0.0770	mg/kg	<0.0252	mg/kg	<0.0134	mg/kg	<0.500	µg/L	<0.500	µg/L
	P & M -Xylene	<0.154	mg/kg	<0.0505	mg/kg	<0.0267	mg/kg	<1.00	µg/L	<1.00	µg/L
	Toluene	<0.0770	mg/kg	<0.0252	mg/kg	<0.0134	mg/kg	<0.500	µg/L	<0.500	µg/L
	Total Xylenes	<0.232	mg/kg	<0.0755	mg/kg	<0.0401	mg/kg	<1.50	µg/L	<1.50	µg/L
SW8270D SIM (PAH)	1-Methylnaphthalene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	2-Methylnaphthalene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	0.0409 J	µg/L	<0.0240	µg/L
	Acenaphthene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Acenaphthylene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Anthracene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Benzo(a)anthracene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Benzo(a)pyrene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.00960	µg/L	<0.00960	µg/L
	Benzo(b)fluoranthene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Benzo(g,h,i)perylene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Benzo(k)fluoranthene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Chrysene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Dibenzo(a,h)anthracene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.00960	µg/L	<0.00960	µg/L
	Fluoranthene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Fluorene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Indeno(1,2,3-cd)pyrene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L
	Naphthalene	<b>&lt;0.0855</b>	<b>mg/kg</b>	<0.0115	mg/kg	<0.0107	mg/kg	0.06 J	µg/L	<0.0481	µg/L
Phenanthrene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	0.0386 J*	µg/L	0.0189 J*	µg/L	
Pyrene	<0.107	mg/kg	<0.0143	mg/kg	<0.0135	mg/kg	<0.0240	µg/L	<0.0240	µg/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America, Inc. work order 1213523.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).  
 Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates of samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS, respectively.

- NA No applicable regulatory limit exists for the associated analyte.
- Analytical sample not collected; parameter not required.
- < Analyte was not detected; reported as <LOD.
- J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.
- J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)
- B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)

<Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.  
 Bold The detected concentration exceeds the regulatory limit for the associated analyte.

Surface Water Sample  
 Groundwater Sample

DEC = Alaska Department of Environmental Conservation; BTEX = benzene, toluene, ethylbenzene, and xylenes; µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram; PAH = polynuclear aromatic hydrocarbons

Table 6 - June 2021 Location Summary Petroleum Analytical Results

Analytical Method	Analyte	HOM6									
		HOM6-SS		HOM6-SUB1		HOM6D-SUB1		HOM6-SUB2		HOM6-GW	
		Sample Depth (ft)	Units	Sample Depth (ft)	Units	5.0	Units	15.0	Units	Groundwater	Units
AK101	Gasoline Range Organics	<6.48 B*	mg/kg	<4.16 B*	mg/kg	<2.44	mg/kg	<2.94	mg/kg	<0.0500	mg/L
AK102	Diesel Range Organics	21.7 J	mg/kg	18.3 J	mg/kg	17.2 J	mg/kg	18.9 J	mg/kg	<0.612 B*	mg/L
AK103	Residual Range Organics	190	mg/kg	96.5 J	mg/kg	82.9 J	mg/kg	81.3 J	mg/kg	<b>1.20</b>	<b>mg/L</b>
SW8260D (BTEX)	Benzene	<0.0162	mg/kg	<0.0104	mg/kg	<0.0123	mg/kg	<0.0147	mg/kg	<0.200	µg/L
	Ethylbenzene	<0.0324	mg/kg	<0.0208	mg/kg	<0.0245	mg/kg	<0.0294	mg/kg	<0.500	µg/L
	o-Xylene	<0.0324	mg/kg	<0.0208	mg/kg	<0.0245	mg/kg	<0.0294	mg/kg	<0.500	µg/L
	P & M -Xylene	<0.0650	mg/kg	<0.0417	mg/kg	<0.0490	mg/kg	<0.0590	mg/kg	<1.00	µg/L
	Toluene	<0.0324	mg/kg	<0.0208	mg/kg	<0.0245	mg/kg	<0.0294	mg/kg	<0.500	µg/L
	Total Xylenes	<0.0970	mg/kg	<0.0625	mg/kg	<0.0735	mg/kg	<0.0880	mg/kg	<1.50	µg/L
SW8270D SIM (PAH)	1-Methylnaphthalene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	2-Methylnaphthalene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Acenaphthene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Acenaphthylene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Anthracene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Benzo(a)anthracene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Benzo(a)pyrene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.00960 J*	µg/L
	Benzo(b)fluoranthene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Benzo(g,h,i)perylene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Benzo(k)fluoranthene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Chrysene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Dibenzo(a,h)anthracene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.00960 J*	µg/L
	Fluoranthene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Fluorene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Indeno(1,2,3-cd)pyrene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L
	Naphthalene	<0.0123	mg/kg	<0.0116	mg/kg	<0.0115	mg/kg	<0.0115	mg/kg	<0.0481 J*	µg/L
Phenanthrene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L	
Pyrene	<0.0154	mg/kg	<0.0145	mg/kg	<0.0143	mg/kg	<0.0144	mg/kg	<0.0240 J*	µg/L	

Notes: Results reported from Eurofins TestAmerica work ord  
Regulatory limits from 18 AAC 75.341 Table B1 Meth  
Samples HOM6D-SUB1 , HOM7D-SS , HOM11D-SS

NA No applicable regulatory limit exists for the associated

— Analytical sample not collected; parameter not require

< Analyte was not detected; reported as <LOD.

J Estimated concentration, detected greater than the de

J\* Estimated concentration due to quality control failures

B\* Result is included in the same preparatory batch as a

<Bold The laboratory's limit of detection (LOD) is greater tha

**Bold** The detected concentration exceeds the regulatory lin

Surface Water Sample

Groundwater Sample

DEC = Alaska Department of Environmental Conserv; PFAS = per- and polyfluoroalkyl substances

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	HOM1				HOM2				HOM3			
		HOM1-SS		HOM-SW-1		HOM2-SS		HOM-SW-2		HOM3-SS		HOM-SW-3	
		Surface Soil	Units	Surface Water	Units	Surface Soil	Units	Surface Water	Units	Surface Soil	Units	Surface Water	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	1.2	µg/kg	17	ng/L	<0.20	µg/kg	570	ng/L	<0.18	µg/kg	69	ng/L
	Perfluorohexanoic acid (PFHxA)	0.085 J	µg/kg	4.3	ng/L	<0.20	µg/kg	380	ng/L	<0.18	µg/kg	100 J*	ng/L
	Perfluoroheptanoic acid (PFHpA)	0.042 J	µg/kg	2.4	ng/L	<0.20	µg/kg	170	ng/L	<0.18	µg/kg	56	ng/L
	Perfluorononanoic acid (PFNA)	<0.21	µg/kg	0.46 J	ng/L	<0.20	µg/kg	46	ng/L	<0.18	µg/kg	10	ng/L
	Perfluorobutanesulfonic acid (PFBS)	0.16 J	µg/kg	4.3	ng/L	<0.20	µg/kg	58	ng/L	<0.18	µg/kg	16	ng/L
	Perfluorodecanoic acid (PFDA)	0.033 J	µg/kg	<2.0	ng/L	0.049 J	µg/kg	7.9	ng/L	<0.18	µg/kg	1.3 J*	ng/L
	Perfluoroundecanoic acid (PFUnA)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	1.1 J	ng/L	<0.18	µg/kg	<1.9 J*	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0	ng/L	<0.18	µg/kg	<1.9 J*	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0	ng/L	<0.18	µg/kg	<1.9	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0 J*	ng/L	<0.18	µg/kg	<1.9 J*	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<2.1	µg/kg	<5.0	ng/L	<2.0	µg/kg	<5.0	ng/L	<1.8	µg/kg	<4.8 J*	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<2.1	µg/kg	<5.0	ng/L	<2.0	µg/kg	<5.0	ng/L	<1.8	µg/kg	<4.8 J*	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0	ng/L	<0.18	µg/kg	<1.9	ng/L
	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0	ng/L	<0.18	µg/kg	<1.9	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.21	µg/kg	<2.0	ng/L	<0.20	µg/kg	<2.0	ng/L	<0.18	µg/kg	<1.9	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.26	µg/kg	<4.0	ng/L	<0.25	µg/kg	<4.0	ng/L	<0.23	µg/kg	<3.8 J*	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<b>7.7</b>	<b>µg/kg</b>	7.5	ng/L	<0.50	µg/kg	<b>1,200</b>	<b>ng/L</b>	0.33 J*	µg/kg	100	ng/L
Perfluorooctanoic acid (PFOA)	0.11 J	µg/kg	2.2	ng/L	<0.20	µg/kg	240	ng/L	<0.18	µg/kg	25	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America, Inc. work order 1213523.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).  
 Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates of samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS, respectively.

NA No applicable regulatory limit exists for the associated analyte.  
 — Analytical sample not collected; parameter not required.  
 < Analyte was not detected; reported as <LOD.  
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.  
 J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (\*)  
 B\* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (\*)

<Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.  
 Bold The detected concentration exceeds the regulatory limit for the associated analyte.

Surface Water Sample  
 Groundwater Sample

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram; PFAS = per- and polyfluoroalkyl substances

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	HOM4							
		HOM4-SS		HOM4-SUB1		HOM4-SUB2		HOM-SW-4	
		Surface Soil	Units	9.5	Units	18.0	Units	Surface Water	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	0.28	µg/kg	0.039 J	µg/kg	<0.20	µg/kg	1.3 J	ng/L
	Perfluorohexanoic acid (PFHxA)	0.078 J	µg/kg	0.059 J	µg/kg	<0.20	µg/kg	0.94 J	ng/L
	Perfluoroheptanoic acid (PFHpA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	0.40 J	ng/L
	Perfluorononanoic acid (PFNA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorobutanesulfonic acid (PFBS)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	0.67 J	ng/L
	Perfluorodecanoic acid (PFDA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluoroundecanoic acid (PFUnA)	0.42	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<2.4	µg/kg	<1.9	µg/kg	<2.0	µg/kg	<4.8	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<2.4	µg/kg	<1.9	µg/kg	<2.0	µg/kg	<4.8	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.30	µg/kg	<0.24	µg/kg	<0.25	µg/kg	<3.8	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<b>7.9</b>	<b>µg/kg</b>	<0.49	µg/kg	<0.50	µg/kg	<1.9	ng/L
Perfluorooctanoic acid (PFOA)	<0.24	µg/kg	<0.19	µg/kg	<0.20	µg/kg	<1.9	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (M Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates  
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 B\* Result is included in the same preparatory batch as a blank detection for the associated analyte.  
 <Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.  
 Bold The detected concentration exceeds the regulatory limit for the associated analyte.  
 Surface Water Sample  
 Groundwater Sample  
 DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	HOM5											
		HOM5-SS		HOM5-SUB1		HOM5-SUB2		HOM-SW-5		HOM5-GW		HOM5D-GW	
		Surface Soil	Units	9.0	Units	16.5	Units	Surface Water	Units	Groundwater	Units	Groundwater	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	12	µg/kg	<0.22	µg/kg	<0.20	µg/kg	140	ng/L	150	ng/L	140	ng/L
	Perfluorohexanoic acid (PFHxA)	2.0	µg/kg	0.061 J	µg/kg	0.078 J	µg/kg	140	ng/L	780	ng/L	660	ng/L
	Perfluoroheptanoic acid (PFHpA)	0.73	µg/kg	<0.22	µg/kg	<0.20	µg/kg	55	ng/L	64	ng/L	63	ng/L
	Perfluorononanoic acid (PFNA)	0.19 J	µg/kg	<0.22	µg/kg	<0.20	µg/kg	17	ng/L	<1.9	ng/L	<2.0	ng/L
	Perfluorobutanesulfonic acid (PFBS)	0.53	µg/kg	<0.22	µg/kg	0.031 J	µg/kg	25	ng/L	460	ng/L	470	ng/L
	Perfluorodecanoic acid (PFDA)	0.14 J	µg/kg	<0.22	µg/kg	<0.20	µg/kg	46	ng/L	<1.9	ng/L	<2.0	ng/L
	Perfluoroundecanoic acid (PFUnA)	0.12 J	µg/kg	<0.22	µg/kg	<0.20	µg/kg	1.5 J	ng/L	<1.9	ng/L	<2.0	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	1.2 J	ng/L	<1.9	ng/L	<2.0	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	<2.2	ng/L	<1.9	ng/L	<2.0	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	<2.2	ng/L	<1.9	ng/L	<2.0	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<2.9	µg/kg	<2.2	µg/kg	<2.0	µg/kg	<5.4	ng/L	<4.8	ng/L	<4.9	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<2.9	µg/kg	<2.2	µg/kg	<2.0	µg/kg	<5.4	ng/L	<4.8	ng/L	<4.9	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	<2.2	ng/L	<1.9	ng/L	<2.0	ng/L
	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	<2.2	ng/L	<1.9	ng/L	<2.0	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.29	µg/kg	<0.22	µg/kg	<0.20	µg/kg	<2.2	ng/L	<1.9	ng/L	<2.0	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.36	µg/kg	<0.27	µg/kg	<0.25	µg/kg	<4.3	ng/L	<3.9	ng/L	<3.9	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<b>77</b>	<b>µg/kg</b>	<0.54	µg/kg	<0.51	µg/kg	240	ng/L	3.3	ng/L	3.1	ng/L
Perfluorooctanoic acid (PFOA)	<b>2.4</b>	<b>µg/kg</b>	<0.22	µg/kg	<0.20	µg/kg	140	ng/L	18	ng/L	18	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (M Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates

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Surface Water Sample

Groundwater Sample

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	HOM6									
		HOM6-SS Surface Soil		HOM6-SUB1 5.0		HOM6D-SUB1 5.0		HOM6-SUB2 15.0		HOM6-GW Groundwater	
		Units	Units	Units	Units	Units	Units	Units	Units	Units	
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	5.5	ng/L
	Perfluorohexanoic acid (PFHxA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	8.4	ng/L
	Perfluoroheptanoic acid (PFHpA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	4.9	ng/L
	Perfluorononanoic acid (PFNA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	0.57 J	ng/L
	Perfluorobutanesulfonic acid (PFBS)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	1.5 J	ng/L
	Perfluorodecanoic acid (PFDA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	Perfluoroundecanoic acid (PFUnA)	0.14 J	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0 J*	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<4.0	µg/kg	<2.2	µg/kg	<2.3	µg/kg	<2.0	µg/kg	<5.1	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<4.0	µg/kg	<2.2	µg/kg	<2.3	µg/kg	<2.0	µg/kg	<5.1	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	<2.0	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.50	µg/kg	<0.28	µg/kg	<0.29	µg/kg	<0.25	µg/kg	<4.1	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<1.0	µg/kg	<0.560	µg/kg	<0.58	µg/kg	<0.50	µg/kg	5.4	ng/L
Perfluorooctanoic acid (PFOA)	<0.40	µg/kg	<0.22	µg/kg	<0.23	µg/kg	<0.20	µg/kg	2.3	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (M Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates

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Surface Water Sample

Groundwater Sample

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	HOM14									
		HOM14-SS		HOM14D-SS		HOM14-SUB1		HOM14-SUB2		HOM14-GW	
		Surface Soil	Units	0.5	Units	6.5	Units	19.0	Units	Groundwater	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	0.075 J*	µg/kg	0.042 J*	µg/kg	<0.53	µg/kg	<0.20 J*	µg/kg	2.6	ng/L
	Perfluorohexanoic acid (PFHxA)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	1.0 J	ng/L
	Perfluoroheptanoic acid (PFHpA)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20 J*	µg/kg	<1.9	ng/L
	Perfluorononanoic acid (PFNA)	<0.27	µg/kg	<0.25 J*	µg/kg	<0.53	µg/kg	<0.20 J*	µg/kg	<1.9	ng/L
	Perfluorobutanesulfonic acid (PFBS)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	0.68 J	ng/L
	Perfluorodecanoic acid (PFDA)	<0.27	µg/kg	<0.25 J*	µg/kg	<0.53	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluoroundecanoic acid (PFUnA)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20 J*	µg/kg	<1.9	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.27	µg/kg	<0.25 J*	µg/kg	<0.53 J*	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.27	µg/kg	<0.25	µg/kg	<0.53 J*	µg/kg	<0.20	µg/kg	<1.9	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<2.7	µg/kg	<2.5 J*	µg/kg	<5.3	µg/kg	<2.0 J*	µg/kg	<4.6	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<2.7	µg/kg	<2.5	µg/kg	<5.3 J*	µg/kg	<2.0	µg/kg	<4.6	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	<1.9	ng/L
	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	<1.9	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.27	µg/kg	<0.25	µg/kg	<0.53	µg/kg	<0.20	µg/kg	<1.9	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.33	µg/kg	<0.32	µg/kg	<0.66	µg/kg	<0.25 J*	µg/kg	<3.7	ng/L
Perfluorooctanesulfonic acid (PFOS)	<0.66	µg/kg	<0.63 J*	µg/kg	<1.3	µg/kg	<0.50 J*	µg/kg	<1.9	ng/L	
Perfluorooctanoic acid (PFOA)	<0.27	µg/kg	<0.25 J*	µg/kg	<0.53	µg/kg	<0.20 J*	µg/kg	<1.9	ng/L	

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Surface Water Sample

Groundwater Sample

DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram

Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	KD3						BL-SED					
		KD3-SS		KD3-SUB1		KD3-SUB2		KD3-GW		BL-SED		BL-SW	
		Surface Soil	Units	6.0	Units	11.5	Units	Groundwater	Units	Sludge	Units	Surface Water	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	0.10 J	µg/kg	<0.22	µg/kg	<0.22	µg/kg	1.1 J	ng/L	0.57 J	µg/kg	8.6	ng/L
	Perfluorohexanoic acid (PFHxA)	<0.58	µg/kg	<0.22 J*	µg/kg	<0.22 J*	µg/kg	1.6 J	ng/L	<2.4	µg/kg	2.8	ng/L
	Perfluoroheptanoic acid (PFHpA)	<0.58	µg/kg	<0.22 J*	µg/kg	<0.22	µg/kg	0.43 J	ng/L	<2.4	µg/kg	1.6 J	ng/L
	Perfluorononanoic acid (PFNA)	<0.58	µg/kg	<0.22	µg/kg	<0.22 J*	µg/kg	<2.1	ng/L	<2.4	µg/kg	0.79 J	ng/L
	Perfluorobutanesulfonic acid (PFBS)	<0.58	µg/kg	<0.22	µg/kg	<0.22	µg/kg	<2.1	ng/L	<2.4	µg/kg	1.5 J	ng/L
	Perfluorodecanoic acid (PFDA)	<0.58	µg/kg	<0.22	µg/kg	<0.22 J*	µg/kg	<2.1	ng/L	<2.4	µg/kg	<2.0	ng/L
	Perfluoroundecanoic acid (PFUnA)	<0.58 J*	µg/kg	<0.22	µg/kg	<0.22 J*	µg/kg	<2.1 J*	ng/L	<2.4	µg/kg	<2.0	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.58	µg/kg	<0.22 J*	µg/kg	<0.22 J*	µg/kg	<2.1 J*	ng/L	<2.4	µg/kg	<2.0	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.58	µg/kg	<0.22	µg/kg	<0.22	µg/kg	<2.1	ng/L	<2.4	µg/kg	<2.0	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.58	µg/kg	<0.22	µg/kg	<0.22 J*	µg/kg	<2.1 J*	ng/L	<2.4	µg/kg	<2.0	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<5.8 J*	µg/kg	<2.2	µg/kg	<2.2 J*	µg/kg	<5.2 J*	ng/L	<24	µg/kg	<5.0	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<5.8 J*	µg/kg	<2.2	µg/kg	<2.2	µg/kg	<5.2 J*	ng/L	<24	µg/kg	<5.0	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.58	µg/kg	<0.22	µg/kg	<0.22	µg/kg	<2.1	ng/L	<2.4	µg/kg	<2.0	ng/L
	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.58	µg/kg	<0.22	µg/kg	<0.22	µg/kg	<2.1	ng/L	<2.4	µg/kg	<2.0	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.58	µg/kg	<0.22	µg/kg	<0.22	µg/kg	<2.1	ng/L	<2.4	µg/kg	<2.0	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.72	µg/kg	<0.27	µg/kg	<0.28 J*	µg/kg	<4.2	ng/L	<3.0	µg/kg	<4.0	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<1.4	µg/kg	<0.55 J*	µg/kg	<0.56 J*	µg/kg	1.0 J	ng/L	<b>6.2 J*</b>	<b>µg/kg</b>	20	ng/L
Perfluorooctanoic acid (PFOA)	<0.58	µg/kg	<0.22 J*	µg/kg	<0.22 J*	µg/kg	<2.1	ng/L	<2.4	<b>µg/kg</b>	2.6	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (M Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates

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Surface Water Sample

Groundwater Sample

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Table 7 - June 2021 Location Summary PFAS Analytical Results

Analytical Method	Analyte	LL-SED				FAA1									
		LL-SED		LL-SW		FAA1-SS		FAA1-SUB1		FAA1-SUB2		FAA-MW-1		FAA-MW-2	
		Sludge	Units	Surface Water	Units	Surface Soil	Units	6.5	Units	14.5	Units	Groundwater	Units	Groundwater	Units
EPA 537(Mod) (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	<0.53	µg/kg	1.2 J	ng/L	0.052 J	µg/kg	<0.21	µg/kg	<0.22	µg/kg	0.77 J	ng/L	0.68 J	ng/L
	Perfluorohexanoic acid (PFHxA)	<0.53	µg/kg	1.0 J	ng/L	0.058 J	µg/kg	<0.21	µg/kg	<0.22	µg/kg	0.84 J	ng/L	2.4	ng/L
	Perfluoroheptanoic acid (PFHpA)	<0.53	µg/kg	1.5 J	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	0.43 J	ng/L
	Perfluorononanoic acid (PFNA)	<0.53	µg/kg	0.46 J	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluorobutanesulfonic acid (PFBS)	<0.53	µg/kg	0.33 J	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluorodecanoic acid (PFDA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluoroundecanoic acid (PFUnA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluorododecanoic acid (PFDoA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluorotridecanoic acid (PFTrDA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Perfluorotetradecanoic acid (PFTeA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	<5.3	µg/kg	<5.4	ng/L	<2.4	µg/kg	<2.1	µg/kg	<2.2	µg/kg	<4.6	ng/L	<5.2	ng/L
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	<5.3	µg/kg	<5.4	ng/L	<2.4	µg/kg	<2.1	µg/kg	<2.2	µg/kg	<4.6	ng/L	<5.2	ng/L
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.53	µg/kg	<2.1	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	<0.66	µg/kg	<4.3	ng/L	<0.29	µg/kg	<0.27	µg/kg	<0.27	µg/kg	<3.6	ng/L	<4.1	ng/L
	Perfluorooctanesulfonic acid (PFOS)	<1.3	µg/kg	<2.1	ng/L	<0.59	µg/kg	<0.54	µg/kg	<0.55	µg/kg	<1.8	ng/L	<2.1	ng/L
Perfluorooctanoic acid (PFOA)	<0.53	µg/kg	1.2 J	ng/L	<0.24	µg/kg	<0.21	µg/kg	<0.22	µg/kg	<1.8	ng/L	<2.1	ng/L	

Notes: Results reported from Eurofins TestAmerica work order 320-75270-1 and SGS North America Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (M Samples HOM6D-SUB1, HOM7D-SS, HOM11D-SS, and HOM14D-SS are field-duplicates)

NA No applicable regulatory limit exists for the associated analyte.

— Analytical sample not collected; parameter not required.

< Analyte was not detected; reported as <LOD.

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantification (LOQ).

J\* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

B\* Result is included in the same preparatory batch as a blank detection for the associated analyte.

<Bold The laboratory's limit of detection (LOD) is greater than the regulatory limit.

**Bold** The detected concentration exceeds the regulatory limit for the associated analyte.

Surface Water Sample

Groundwater Sample

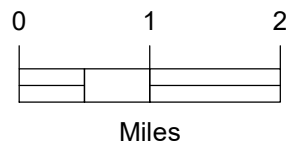
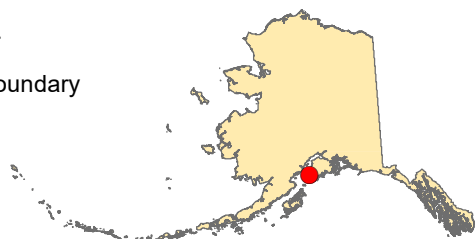
DEC = Alaska Department of Environmental Conservation; µg/kg = micrograms per kilogram



Service Layer Credits: [http://gis.dnr.alaska.gov/terrapixel/cubeserv/OIM\\_BDL?](http://gis.dnr.alaska.gov/terrapixel/cubeserv/OIM_BDL?)

**LEGEND**

— Property Boundary



Homer Airport Initial Site Characterization  
Homer, Alaska

**SITE VICINITY**

April 2022

106031-002




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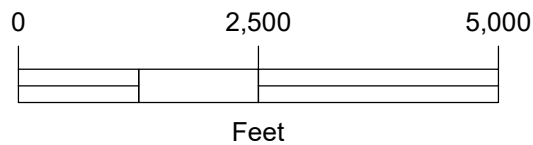
**Figure 1**

**Figure 1**



**LEGEND**

-  AFFF Training Areas
-  Outfalls
-  Property Boundary



Homer Airport PFAS  
Site Characterization  
Homer, Alaska

**SITE MAP**

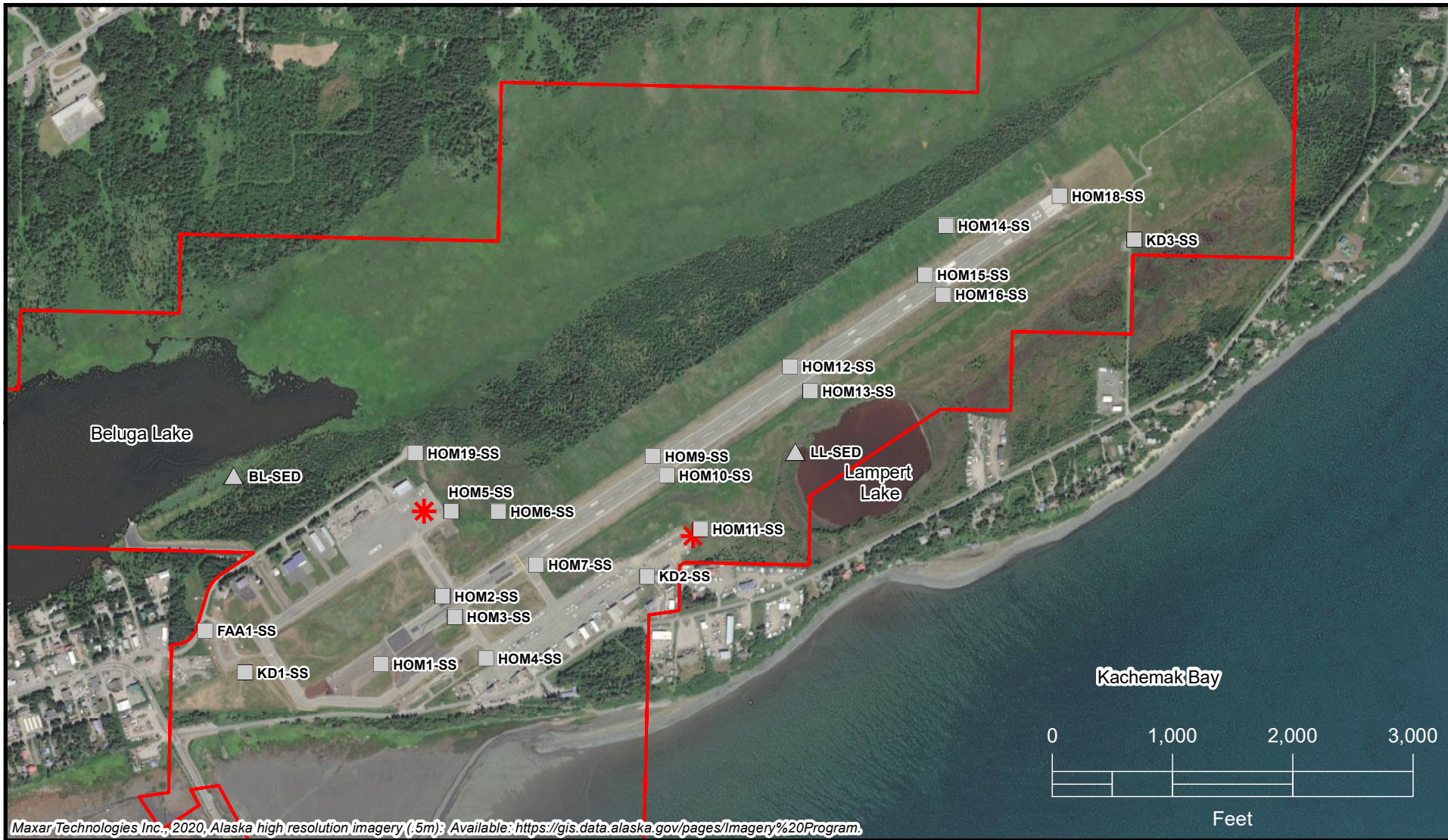
April 2022

106031-002

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**Figure 2**

**Figure 2**



**LEGEND**

- ▲ Sediment Sample
- Surface Soil Sample
- \* AFFF Training Areas
- Airport Property Boundary

Notes:

1. Sample type is designated in the sample name as follows:  
 SS-surface soil sample  
 SED-sediment sample
2. See Table 3 and 4 for analytical results. See Table 6 and 7 for combined results by sample location.

Homer Airport Initial Site Characterization  
 Homer, Alaska

**SURFACE SOIL AND SEDIMENT  
 SAMPLE LOCATIONS**

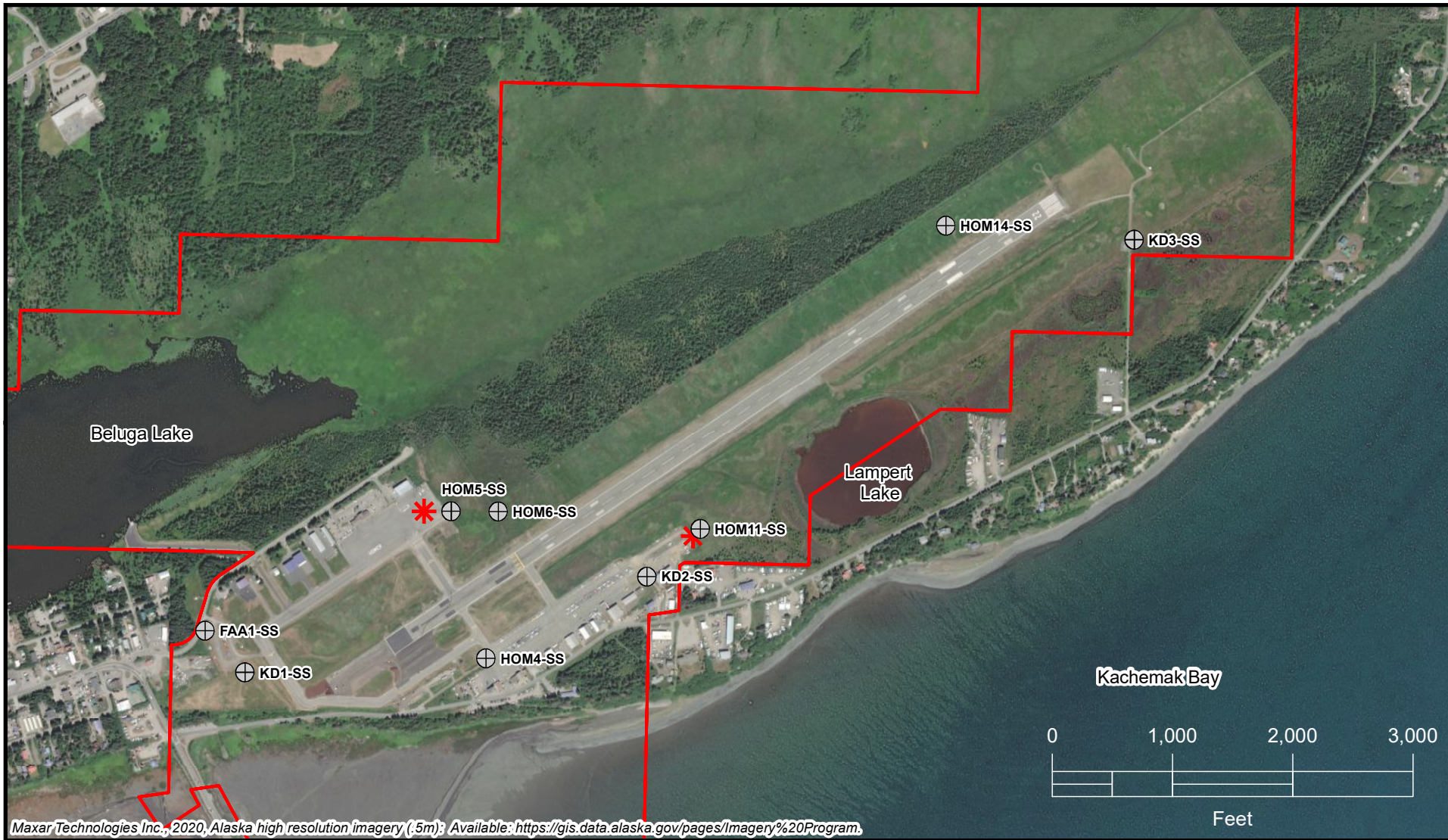
April 2022

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**Figure 3**

**Figure 3**



**LEGEND**

- ⊕ Subsurface Soil Sample
- \* AFFF Training Areas
- Airport Property Boundary

Notes:

1. Sample type is designated in the sample name as follows:  
SUB-subsurface soil sample
2. See Table 3 and 4 for analytical results. See Table 6 and 7 for combined results by sample location.

Homer Airport Initial Site Characterization  
Homer, Alaska

**SUBSURFACE SOIL  
SAMPLE LOCATIONS**

April 2022

106031-002

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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**Figure 4**

**Figure 4**



**LEGEND**

- ⊕ Monitoring Well
- ⊕ Temporary Well Point
- Water Supply Well Sample
- ▲ Surface Water Sample
- \* AFFF Training Areas
- Outfalls
- Airport Property Boundary

Notes:  
1. See Table 1, 2 and 5 for analytical results.



Homer Airport PFAS  
Site Characterization  
Homer, Alaska

**GROUNDWATER, SURFACE WATER,  
AND WATER SUPPLY WELL  
SAMPLE LOCATIONS**

April 2022

106031-002

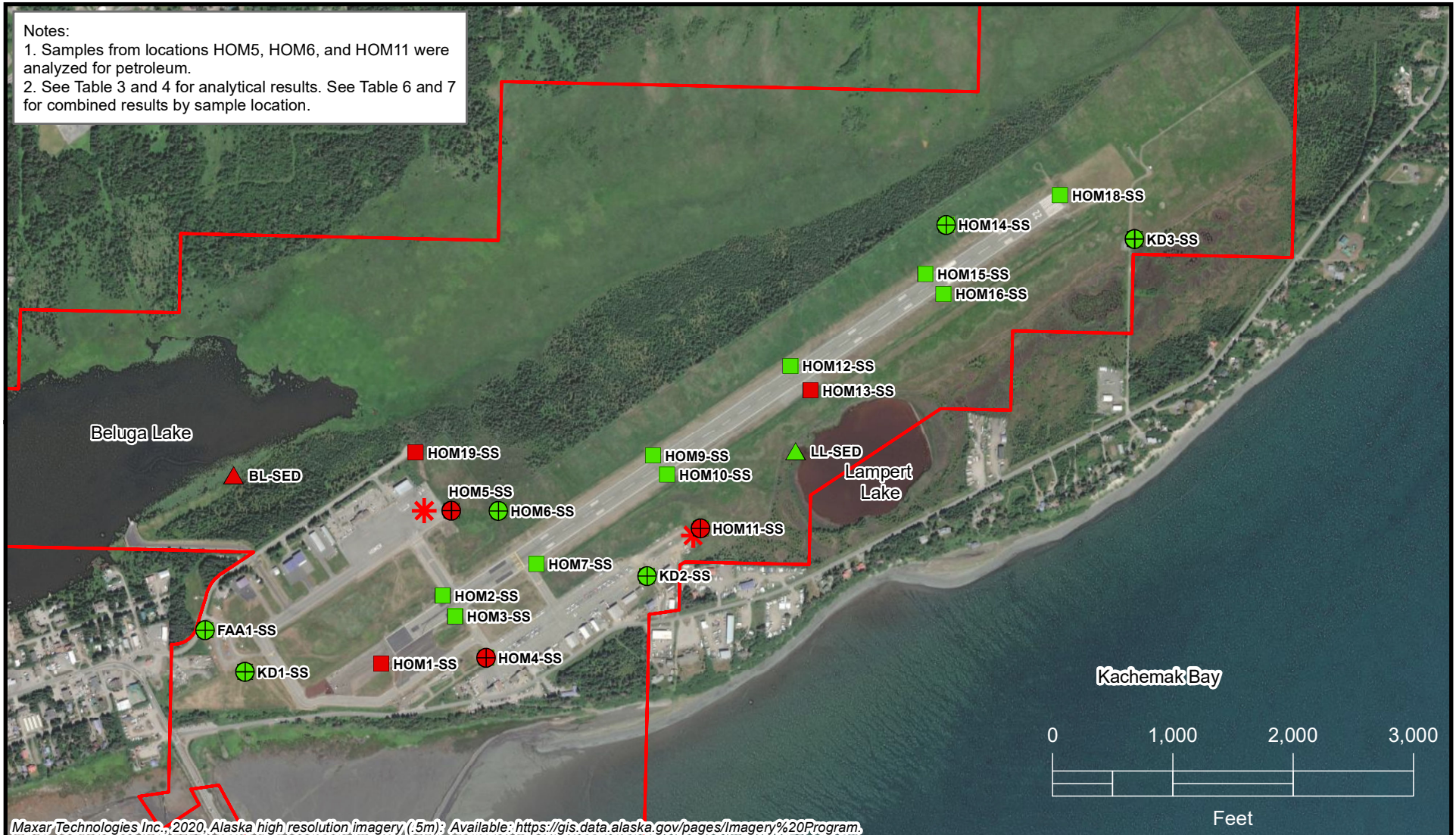
**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**Figure 5**

**Figure 5**

Notes:

1. Samples from locations HOM5, HOM6, and HOM11 were analyzed for petroleum.
2. See Table 3 and 4 for analytical results. See Table 6 and 7 for combined results by sample location.



Maxar Technologies Inc., 2020, Alaska high resolution imagery (.5m); Available: <https://gis.data.alaska.gov/pages/Imagery%20Program>.

**LEGEND**

- AFFF Training Areas
- Airport Property Boundary
- Surface Soil and Soil Boring Sample**
  - PFAS and Petroleum Analyte(s) Exceed Regulatory Limits
  - PFAS Analyte(s) Exceed Regulatory Limits
  - PFAS and Petroleum Analytes Do Not Exceed Regulatory Limits
- Surface Soil Sample**
  - PFAS Analyte(s) Exceed Regulatory Limits
  - PFAS Analyte(s) Do Not Exceed Regulatory Limits
- Sediment Sample**
  - PFAS Analyte(s) Exceed Regulatory Limits
  - PFAS Analytes Do Not Exceed Regulatory Limits

Homer Airport Initial Site Characterization  
Homer, Alaska

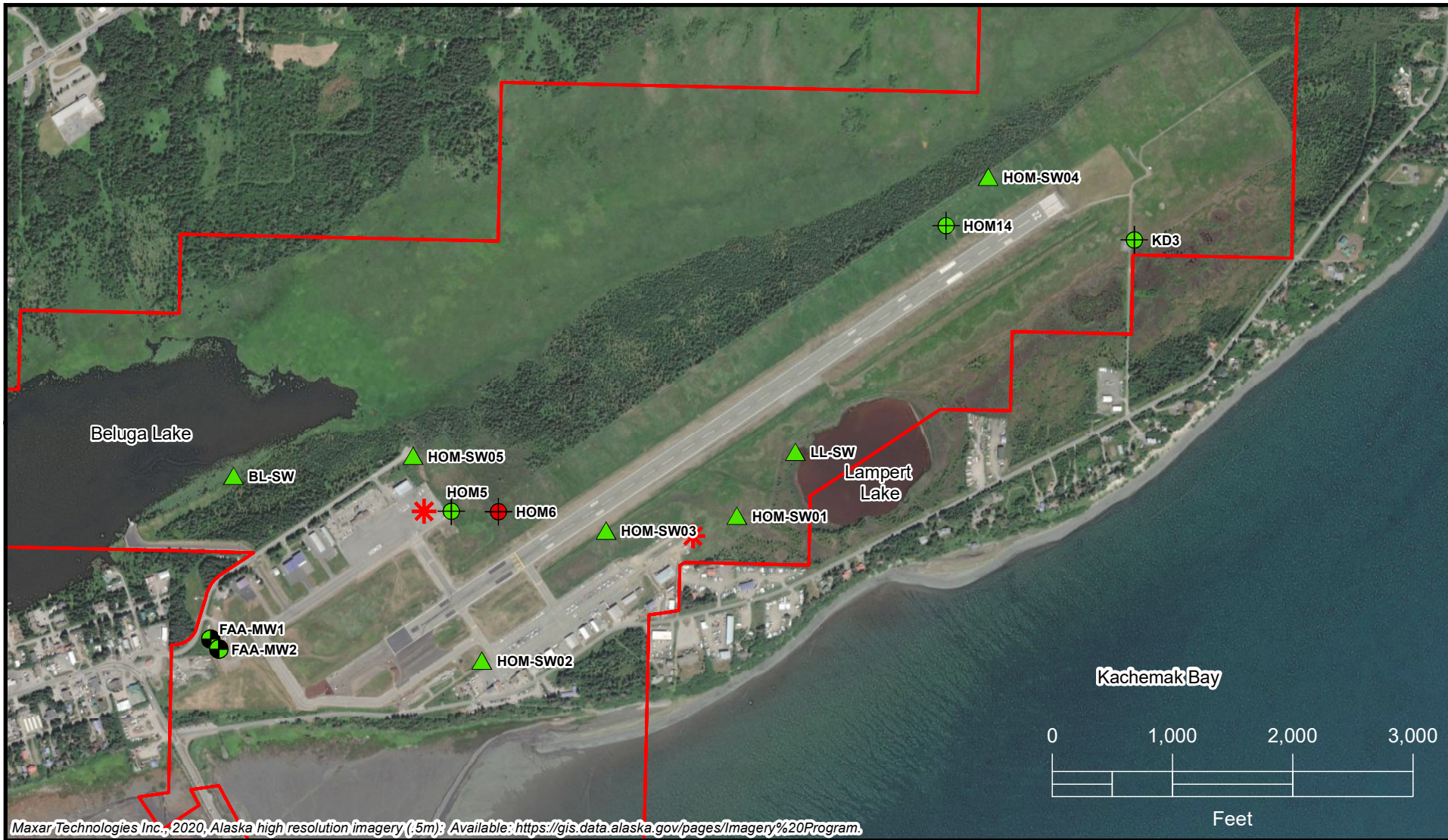
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**SURFACE SOIL, SUBSURFACE SOIL,  
AND SEDIMENT  
ANALYTICAL RESULTS**

April 2022 106031-002

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS **Figure 6**

**Figure 6**



**LEGEND**

- \* AFFF Training Areas
- Airport Property Boundary

**Surface Water Sample**

- ▲ PFAS Analytes Do Not Exceed Regulatory Limits

**Monitoring Well Sample**

- PFAS and Petroleum Analytes Do Not Exceed Regulatory Limits

**Temporary Well Point Sample**

- Petroleum Analyte(s) Exceed Regulatory Limits
- PFAS and Petroleum Analyte(s) Do Not Exceed Regulatory Limits

Notes:  
1. See Table 1 and 2 for analytical results.



Homer Airport Initial Site Characterization  
Homer, Alaska

**SURFACE WATER  
AND GROUNDWATER  
ANALYTICAL RESULTS**

April 2022

106031-002

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**Figure 7**

Figure 7





**LEGEND**

- AFFF Training Areas
- Airport Property Boundary

**Water Supply Well Sample**

- PFAS Analytes Do Not Exceed Regulatory Limit

Notes:  
1. See Table 5 for analytical results.



Homer Airport Initial Site Characterization  
Homer, Alaska

**WATER SUPPLY WELL  
ANALYTICAL RESULTS**

April 2022

106031-002

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**Figure 8**

**Figure 8**

Appendix A  
Field Staff Resumes

APPENDIX A: FIELD STAFF RESUMES

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## Morgen E. Donohue

### Environmental Staff / Scientist

**Year Joined S&W: 10/2019**

**Years of Experience: 6**

**Current Firm: 2**

#### **Education:**

Ph.D., Applied Microbiology and Environmental Engineering, University of Notre Dame, 2015

B.S., Civil and Environmental Engineering, Washington State University, 2010

#### **Registration/Certification:**

Engineer in Training (Washington State)

HAZWOPER

Per- and Polyfluoroalkyl Substances (PFAS) Sampling Training

RACER 199 Training

Red Cross Adult First Aid/CPR/AED

Based on her education and work experience, Morgen meets the requirements of a Qualified Environmental Professional, as defined by 18 Alaska Administrative code 75.333.

#### **Professional Summaries:**

Morgen is an environmental engineer with a background in civil and environmental engineering and microbiology. She has experience in the preparation of environmental compliance surveys; biological sample collection, characterization, and analysis; and microbiological sample preparation and analysis. Her professional interests encompass the fields of applied microbiology and bioremediation. Dr. Donohue's doctoral research focused on the influence of physical and environmental influences on the swarming motility of the bacterium *Pseudomonas aeruginosa*, with emphases on the influence of type IV pili and the heavy metals cadmium and nickel. During her undergraduate studies she evaluated the feasibility of using biogenic iron oxides as adsorption sites for cadmium and helped develop and test an iron oxide filter to remove excess phosphorus from water.

Morgen has performed data evaluations; statistical analyses; radiological assessments; collected and processed sediment, groundwater, and soil vapor samples; compiled, managed, and evaluated model data; and has prepared various reports and projects documents for preliminary assessments (PAs), site inspections (SIs), remedial investigations (RIs), treatment studies (TSs), feasibility studies (FSs), remedial action alternatives (RAA), remedial action memorandums (RAMs), and long-term monitoring (LTM) reports. She has also assisted with cost analyses, environmental health evaluations, and human health risk assessments.

#### **Project Experience:**

##### Alaska-Based Projects

**Site Characterization, Homer Air Terminal, Homer, AK.** Collected groundwater, residential water, surface soil, subsurface soil, and surface water samples at the Homer Air Terminal and submitted them for PFAS/PFOS analysis. [5/2021 to Present]

**Sediment Sampling and Analysis, Kodiak Marginal Wharf Demolition, Kodiak, Alaska.** Prepared a draft sampling and analysis plan for a planned wharf demolition. [8/2020 to Present]

**Document Review, Icicle Seafoods and Ocean Beauty Seafoods Properties, Alaska.** Reviewed historic site environmental reports to identify recognized environmental concerns (RECs) and evaluate whether the RECs

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have been addressed. [3/2020]

### City of Richland Projects

**Horn Rapids Wetland Monitoring, Richland, Washington.** Conducted Spring 2020 and Spring 2021 wetland monitoring (measured depth to saturation zone and groundwater), researched historic and current groundwater levels, installed temporary groundwater monitoring wells in the mitigated wetland, deployed data loggers to monitor long-term groundwater levels. [3/2020 to Present]

**Groundwater Monitoring, Former City Shops Site, Richland, Washington.** Collected groundwater samples and submitted them for analysis, composed groundwater monitoring reports, and organized and submitted data to Ecology EIM database. [11/2019 to Present]

### Port of Benton Projects

**Demolition Oversight, Eurofins TestAmerica Facilities, Richland, Washington.** Analyzed and compared results from soil samples collected by Geosyntec and Shannon & Wilson; put together rough order of magnitude cost estimates for additional soil sampling and/or soil excavation; and composed project proposals and reports. [12/2019 - Present]

**Environmental Services, Blue Star Enterprises Site, Richland, Washington.** Met with the Client to discuss Phase I and Limited Phase II ESA results and plans for moving forward; designed, coordinated, and oversaw RI field work; observed soil excavation and collected confirmation samples; submitted application to Ecology's Voluntary Cleanup Program; composed project proposals and reports. [11/2019 – Present]

**Monitoring and Closure, Former Marv Bonney Site, Prosser Airport, Prosser, Washington.** Organized and submitted data to the Washington State Department of Ecology's (Ecology's) Environmental Information Management (EIM) database. [11/2019 – 2/2020]

### Yakima Valley Farm Workers Clinic Projects

**Environmental Audit, Four Parcels in Yakima, Yakima, Washington.** Reviewed readily available historical site documents and composed the environmental audit report. [6/2021 to Present]

**Phase I Environmental Site Assessment, Lot 1 at 5109 Summitview Avenue, Yakima, Washington.** Obtained and reviewed historical site documents, conducted interviews, and composed the Phase I ESA report. [4/2021 to Present]

**Phase I Environmental Site Assessments, 28 Sites, Seattle, Washington.** Obtained and reviewed historical site documents, composed portions of the Phase I ESA reports, and/or composed recommendation letters for the following sites [2/2021 to Present]:

- Safeway Store 1477
- United Services
- Seattle City Light Interbay
- Interbay Landfill
- Leathercare Inc.
- Seattle Vagabond Inn
- National Lead Co.
- Block 20 – 8<sup>th</sup> and Blanchard
- Former Bank of California Building and 5<sup>th</sup> and Madison Building
- 800 5<sup>th</sup> Avenue – Bank of America Building

- Kennedy Hotel Garage
- Fairmont Parking Garage
- 406 5<sup>th</sup> Avenue South
- 418 5<sup>th</sup> Avenue South
- Texaco 632320366
- King County Metro Ryerson Base
- Jack in the Box, 4<sup>th</sup> & Holgate
- Industrial Plating Corporation
- Shell Station 120993
- Alaskan Copper & Brass Complex
- 3414 4<sup>th</sup> Avenue South
- Crain NW Inc.
- Seattle Right of Way, 2<sup>nd</sup> & Spokane
- Frye Commerce Center
- House of Kleen
- West Seattle Arco
- Jiffy Lube/Money Tree
- Jefferson Square

**Phase I Environmental Site Assessment, Lincoln Avenue Church, Toppenish, Washington.** Obtained and reviewed historical site documents, conducted interviews, and composed the Phase I ESA report. [2/2021 to 7/2021]

**Phase I Environmental Site Assessment, Terrace Heights Administration Building Property, Yakima, Washington.** Obtained and reviewed historical site documents, composed portions of the Phase I ESA report. [5/2020]

**Phase I Environmental Site Assessment, Kennewick-Ivy Property, Kennewick, Washington.** Conducted a site walk and reviewed historic site documents. [3/2020 to 1/2021]

**Phase I and Phase II Environmental Site Assessments, Mabton Garden Center, Mabton, Washington.** Conducted a Phase I ESA site walk, prepared proposal for a Limited Phase II ESA, planned and coordinated Limited Phase II ESA, and collected composite surface soil samples and samples from exploratory borings. [1/2020 to 5/2020]

### Other Environmental Sampling Projects

**Soil Sampling Results, Cle Elum Dam Fish Passage Facility, Ronald, Washington.** Collected surface soil samples and submitted them for petroleum hydrocarbon analysis, analyzed laboratory results, composed a letter report summarizing the results for the Client. [3/2021 to Present]

**Phase I Environmental Site Assessment, Centralia Operating Base, Centralia, Washington.** Obtained and reviewed historical site documents, composed the Phase I ESA report. [9/2020 – 12/2020]

**Phase I Environmental Site Assessment, North King Service Center, Redmond, Washington.** Obtained and reviewed historical site documents, composed the Phase I ESA report. [9/2020 – 12/2020]

**Feasibility Study, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge, Williamson County, Illinois.** Prepared RACER estimates for remedial alternatives. [8/2020 to Present]

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**Yakima River – Gap to Gap Ecosystem Restoration Project, Yakima, Washington.** Conducted a Phase I ESA for the Greenway Trail Realignment site, designed and conducted a Phase I and Limited Phase II ESA for the Nob Hill Levee Setback site; designed a Phase II ESA for the Nob Hill Levee Setback site. [4/2020 to Present]

**Environmental Services, West Cashmere Bridge Replacement, Chelan County, Washington.** Composed a proposal for confirmation environmental soil sampling, collected confirmation soil samples, composed Remedial Action Summary report. [1/2020 to Present]

**Jorgensen Force Corporation Project, 8531 East Marginal Way South, Tukwila, Washington.** Put together a rough order of magnitude (ROM) cost estimate for excavations. [1/2020 to Present]

**Air Monitoring, Former Dry Cleaner Site, Columbia Center Mall, Kennewick, Washington.** Designed indoor air and sub-slab sampling, collected samples, and composed project proposals and reports. [12/2019 to Present]

**Pilot Injection, 8801 East Marginal Way S., Tukwila, Washington.** Analyzed pre- and post-injection natural attenuation data to determine if degradation of contaminants occurred. [10/2019 to 11/2019]

### Military Projects

**Time Critical Removal Action, Coral Pits 1 and 2 (Site 6 and Site 7), Former Naval Air Station Barbers Point, Joint Base Pearl Harbor-Hickam (JBPHH), US Department of the Navy, NAVFAC Hawaii, CLEAN Program | Kalaeloa, Oahu, HI.** Composed an Action Memorandum for removing asbestos containing material from Coral Pits 1 and 2 and led the document review process. [06/2019 to 10/2019] Experience while at a previous employer.

**Interim Operations, Maintenance, and Monitoring, Onizuka Village ST31, JBPHH, US Department of the Navy, NAVFAC Hawaii, CLEAN Program | Oahu, HI.** Conducted soil vapor sampling, digitized field sample sheets and log books, and took photos of permanent soil vapor wells to enable future samplers to locate them more easily. [01/2019 to 10/2019]. Experience while at a previous employer.

**Former Aiea Laundry Facility, Site 31, JBPHH, US Department of the Navy, NAVFAC Hawaii, CLEAN Program | Oahu, HI.** Organized and performed indoor, sub-slab, and outdoor soil vapor sampling; collected and analyzed site weather station data; compiled cost justification documentation for an Implementation Plan/Cost Estimate (IP/CE); and composed, reviewed, and edited Statements of Work (SOWs) and Modifications (MODs) for project subcontractors. [10/2018 to 10/2019] Experience while at a previous employer.

**Amended Response Action Memorandum for the Hawaii Department of Health, JBPHH, US Department of the Navy, NAVFAC Hawaii, CLEAN Program | Oahu, HI.** Reevaluated effectiveness of implemented and ongoing remedial actions at petroleum-related Navy sites on Oahu. Responsibilities included conducting an environmental hazards evaluation (EHE) using the most recent site monitoring data and proposing new and/or amended remedial actions as needed to meet site clean-up goals. [09/2018 to 10/2019] Experience while at a previous employer\*

**RI/FS Report Northern Munitions Response Sites, Joint Base Pearl Harbor-Hickam Lualualei Annex, Joint Base Pearl Harbor-Hickam, US Department of the Navy, NAVFAC Pacific, CLEAN Program | Oahu, HI.** Acted as Deputy Project Manager. Reviewed, organized, and edited (as needed) a RI/FS report prepared by a separate Navy contractor. Responsibilities also included analyzing project data to facilitate report edits and responding to reviewer comments. [06/2018-10/2019] Experience while at a previous employer\*

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**Investigation and Environmental Risk Evaluation for Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, US Department of the Navy, NAVFAC Pacific, CLEAN Program | Pearl Harbor, HI.** Compiled, organized, and maintained a database of historic and current data for the Red Hill Storage Facility (RHSF) modeling effort, including, but not limited to, groundwater elevations, pumping rates, and groundwater chemistry. Responsibilities also included analyzing project data, collecting and shipping groundwater samples, composing portions of project deliverables (e.g., Existing-Data Summary and Evaluation Report, and LTM reports), and attending periodic face-to-face modeling meetings with the Client, Regulators, and subject matter experts [10/2016-10/2019] Experience while at a previous employer\*

**Decision Document Amendments for Nine Sites, Joint Base Pearl Harbor-Hickam, US Department of the Navy, NAVFAC Pacific, CLEAN Program | Pearl Harbor, HI.** Reviewed, summarized, and analyzed previous site investigations, composed portions of the Sampling Analysis Plan (SAP) and WP, and conducted site visits to select soil vapor sampling locations. [08/2016-10/2019] Experience while at a previous employer

**Phase III RI, Red Hill Oily Waste Disposal Facility.** Performed data analysis of groundwater monitoring data to identify trends between monitoring wells, composed portions of the WP, conducted a bioremediation and biostimulation literature review, composed a proposal for evaluating the usability of bioremediation at the site, and reviewed project documents. [08/2016 - 04/2017] Experience while at a previous employer

**Environmental Health Evaluation (EHE), Honolulu Transportation Terminal, Chevron | Honolulu, HI.** Compiled and compared historical soil and groundwater data to Hawaii Department of Health Environmental Action Levels to determine which, if any, contaminants posed a risk to human health. Responsibilities also included drafting and reviewing the background section of the EHE report. [03/2016 – 04/2016] Experience while at a previous employer\*

**Apra Harbor Sediment FS, Naval Base Guam.** Identified data gaps from the RI to address in the FS in order to refine the extent of sediment contamination and identify remediation alternatives. Conducted a radiological assessment of Apra Harbor sediment to evaluate potential general radioactive material (G-RAM) contamination, and composed a technical memorandum detailing a passive sampler versus fish tissue sampling study to be conducted concurrently with the FS field work. Responsibilities also included developing and reviewing sampling plans, identifying potential contaminant exposure from maintenance dredging, and drafting and reviewing the HSP, statements of work (SOWs), and portions of the WP. [01/2016 – 12/2016] Experience while at a previous employer\*

**Apra Harbor Sediment RI, Naval Base Guam.** Analyzed data and performed statistical analyses to characterize the horizontal and vertical extent of sediment contamination, select remedial footprints, and evaluate potential relationships between biota tissue and sediment contamination data. Responsibilities also included drafting and reviewing portions of the RI report, and responding to reviewer comments. [10/2015 – 06/2016] Experience while at a previous employer\*

**Treatability Study, Pearl Harbor Sediments, Pearl Harbor, HI.** Performed data and statistical analyses to evaluate the effectiveness of activated carbon on reducing porewater chemical of potential concern (COPC) concentrations in under-pier areas. Responsibilities also included collecting and processing sediment samples, drafting and reviewing project planning documents, and drafting and reviewing project reports. [10/2015 – 12/2016] Experience while at a previous employer\*





## ADAM WYBORN, PE | ENVIRONMENTAL ENGINEER

### SHANNON & WILSON



#### **Education:**

BS, Ecological Engineering,  
Oregon State University, 2012

#### **Professional Registrations/ Licenses and Certifications:**

Professional Engineer  
(Environmental), EV –163458,  
Alaska, 2021

Environmental Professional –  
(ASTM E1527 13)

Hazardous Waste Operations &  
Emergency Response  
(HAZWOPER) - (OSHA 29 CFR  
1910.120)

Hazardous Materials or  
Dangerous Goods for Transport -  
(49 CFR 172H and IATA DGR1.5)

CPR, First Aid, AED - (American  
Red Cross)

State of Alaska Qualified Sampler  
- (18 AAC 75, 18 AAC 78)

State of Alaska Qualified  
Environmental Professional - (18  
AAC 75, 18 AAC 78)

Adam has aided Shannon & Wilson's response to several large, high-profile per- and polyfluoroalkyl substances (PFAS) and other groundwater- and soil contamination projects throughout the state of Alaska. Adam has experience working on military installations, airports, large industrial sites, as well as remote sites such as in Alaska's interior and northern villages. Adam has been involved with many site cleanup projects requiring excavation and containment of contaminated soil and treatment of contaminated water. Adam regularly coordinates with interdisciplinary S&W personnel and state regulatory bodies to design and implement treatment and/or remediation solutions which comply with state environmental standards.

#### **Relevant Project Experience:**

##### **Fairbanks International Airport (FAI), FAI Plume Stop Pilot Study | Fairbanks, AK (2020)**

**Environmental Engineer.** Shannon & Wilson worked with Regenesys and the FAI to conduct a pilot study aimed at determining the effectiveness of PlumeStop as an in-situ groundwater remediation solution within the FAI per- and polyfluoroalkyl substances (PFAS) groundwater plume. During this study, Adam has been responsible for acquiring permits and maintaining compliance with regulatory agencies including the EPA, ADEC, and FAA. Adam prepared and attained EPA permits to install monitoring wells and injection wells at the project site and then supervised their installation.

##### **Alaska Department of Administration, Division of Risk Management, Gustavus Airport PFAS | Gustavus, AK (2018-Ongoing)**

**Environmental Engineer.** In 2018 PFAS was detected in groundwater at the Gustavus airport. Shannon & Wilson was asked to assess residential impacts in accordance with our Statewide contract for PFAS response. Shannon & Wilson's experience and adaptive approach allowed for the delineation of the extent of private well impacts within three months. Adam has assisted with extensive site characterization activities, drinking water-supply well sampling and analysis, data review and reporting, and point-of-entry treatment (POET) option assessment. Adam aids in the QC data review processes to provide drinking-water analytical results in a timely manner, without affecting the quality of deliverables.

##### **Alaska DOT&PF, Dillingham Airport PFAS | Dillingham, AK (2019-Ongoing)**

**Project Manager.** The Dillingham Airport was a source of PFAS discharge into soil and groundwater in the community of Dillingham. Adam oversees and manages site characterization field work including surface water, soil and sediment sampling, field-screening, monitoring well installation, and monitoring well sampling. He completed a private well search and sampling effort that identified

an offsite PFAS groundwater plume. A more extensive plume characterization effort was completed in 2021, including the installation of 25 new monitoring wells. He is responsible for coordinating ongoing bottled water deliveries and prepared a long-term alternate water feasibility study to assist DOT & PF with evaluating potential solutions for impacted properties.

##### **Fairbanks International Airport (FAI) /Alaska Department of Transportation & Public Facilities (DOT & PF)/Alaska Department of Administration, Division of Risk Management, FAI PFAS | Fairbanks, AK (2017-Ongoing)**

**Environmental Engineer.** In 2018 PFAS was detected in monitoring wells and surface-water bodies at and near the FAI, and there was concern that adjacent neighborhoods were affected. The objective of the initial well search and sampling effort was to identify private water-supply wells that were connected to indoor plumbing and determine whether these wells had

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been affected by the PFAS groundwater contamination associated with the FAI. Adam has been involved in planning and executing remedial action at a known source area. Additionally, Adam has participated in residential sampling events and reporting of analytical data with private well owners. Adam regularly performs QA/QC reviews of the laboratory data and reporting materials.

**Alaska Department of Transportation & Public Facilities, Gustavus DOT&PF PFAS | Gustavus, AK (2019-Ongoing)**

**Environmental Engineer.** Shannon & Wilson is contracted with the Alaska DOT & PF to perform PFAS sampling and associated work in support of corrective actions being carried out at the Gustavus PFAS groundwater plume. Adam's role in the project involves residential well sampling, site surveys, and aiding in the design of point of entry (POE) treatment systems. Adam works with Shannon & Wilson's subcontractor to design modular treatment system to provide potable water to the affected residents of Gustavus.

**Alaska TestLab/U.S. Air Force, ATL Eielson Field Screening Projects | Eielson, Air Force Base (AFB), AK (2019-Ongoing)**

**Environmental Engineer.** Shannon & Wilson was requested to provide environmental services during the construction of a Steam-Water Utilidor Extension from the on-base power plant to the South Loop of Eielson Air Force Base. Perfluoroalkyl substances (PFAS), hydrocarbon, and coal ash contamination were known to exist within large portions of the alignment and excavated soil required different handling and disposal procedures. Adam served as Shannon & Wilson's primary field operative and point of contact for the project. Adam's field responsibilities included field-screening and sampling soil during excavation activities, delineating and sampling stockpile sites, coordinating soil segregation based on observed contamination, and collection of water samples for hazard assessment. All soil sampling performed during active excavation or within stockpile footprints is done via Incremental Sampling Methodology (ISM) and includes PFAS analysis. Adam's other responsibilities include analyzing laboratory data, providing soil disposal recommendations to the United States Army Corps of Engineers (USACE), and performing Level II data reviews to evaluate usability and meet project data-quality objectives.

**City of Fairbanks Engineering, Regional Fire Training Center | Fairbanks, AK (2016-Ongoing)**

**Environmental Engineer.** S&W was contracted by the city of Fairbanks to delineate the extent of a per- and polyfluoroalkyl substances (PFAS) groundwater plume originating from the Regional Fire Training Center (RFTC). Adam routinely assists with residential and monitoring well sampling, laboratory data review, reporting results to private well owners, and drafting corrective action plans.

**References:**

Sammy Cummings, PFAS Program Manager, Alaska DOT&PF, 907.888.5671

David Andersen, Alaska Testlab, (907)290-1526, [dandersen@alaskatestlab.com](mailto:dandersen@alaskatestlab.com)

Michael Boese, United States Air Force, (907)384-3239, [Michael.boese.1@us.af.mil](mailto:Michael.boese.1@us.af.mil)

## Appendix B

# Field Forms

### CONTENTS

- Daily Field Activity Logs
- Soil Sample Collection Log
- Temporary Well Point Sampling Logs
- Water Supply Well Logs

# FIELD ACTIVITIES DAILY LOG

Date 6/14/21

Sheet 1 of     

Project No. 106 031-001

Project Name: Homer Airport PFAS

Field activity subject: Soil + GW sampling

Description of daily activities and events:

- Met Geotek + Homer Electric @ terminal @ 9:00; were told Kevin Jones (airport manager) in State Bldg on otherside of runway. Moved over to State Bldg.
- MED, APW, Geotek, Homer Electric + ASC went out w/ Kevin J. + airport electrician to complete utility locates for prop. boring locations. Started @ ~ 9:30.
- 10:30 Utility locate complete, started mob. to HOM11
- 12:10 Started drilling HOM11
- 15:15 Boring terminated @ 35' due to lack of GW table. Moved ~20' west and started boring HOM-11-2  
HOM-11-2 has similar profile to HOM11 in top 10'  
Called Ashley J. to confer; decided to move on + try to sample perched water layer(s) \*
- 17:00 started K02  
Boring terminated @ 20'

Samples: K02-SS @ 17:00 (0.5'); K02-SUB1 @ 17:25 (6'); K02-SUB2 @ 17:49 (18-19')

\* Samples for HOM11; HOM11-SS and HOM11D-SS @ 12:10<sup>(0.5-2')</sup>; HOM11-SUB1 @ 12:43 (7.5')

- 18:30 Started HOM4  

Samples; HOM4-SS @ 18:45 (1.25'); HOM4-SUB1 @ 19:02 (9.5'); HOM4-SUB2 @ 19:24 (18')

Boring terminated @ 20'
- 19:45 MED, APW, Geotek offsite

Visitors on site: Kevin Jones,

Changes from plans/specifications and other special orders and important decisions:

- Did not encounter GW table; decided to sample perched zone(s) when able
- Not able to install temp wells in HOM4, HOM11, or K02

Weather conditions: Sunny, breezy, little cloud cover

Important telephone calls: Ashley Jaramillo

Personnel on site: MED, APW (S+W); Luke + Jordan (Geotek)

Signature: Morgan Donohue

Date: 6/14/21

**FIELD ACTIVITIES DAILY LOG**

Date 6/15/21

Sheet      of     

Project No. 106031

Project Name: Homer Airport PFA5

Field activity subject: Soil sampling

Description of daily activities and events:

8:00 APW + Geotek on site, mob to K01

8:35 MED on site

8:45 Started K01

Samples: K01-SS @ 9:00 (2-8"); K01-SUB1 @ 9:42 (11.5"); K01-SUB2 @ 11:00 (15-15.5')

Drill stuck @ ~9:45am, called Kevin Jones to troubleshoot

Drill unstuck @ ~10:45

Boring terminated @ 20'

11:30 Started FAA1

Samples: FAA1-SS @ 11:50 (0.5'); FAA1-SUB1 @ 12:09 (6.5'); FAA1-SUB2 @ 12:38 (14.5')

Boring terminated @ 15' due to equip. refusal

13:05 Started H0M5

Samples: H0M5-SS @ 13:25 (1'); H0M5-SUB1 @ 13:45 (9'); H0M5-SUB2 @ 13:50 (16.5')

Temp. GW well installed, screened 10-15'

Boring terminated @ 20'

14:15 Started H0M6

Samples: H0M6-SS @ 14:38 (0-0.5'); H0M6-SUB1 + H0M6D-SUB1 @ 15:00 (5'); H0M6-SUB2 @ 15:10 (15')

Boring terminated @ 20'

Temp. GW well installed, screened 0-20'

16:10 Started K03

Samples: K03-SS @ 16:30 (0-0.5'); K03-SUB1 @ 16:40 (6'); K03-SUB2 @ 16:50 (11.5')

Temp. GW well installed, screen 0-15'

Boring terminated @ 15'

17:00 MED offsite

17:20 Started H0M14

Samples: H0M14-SS @ 17:45 (0.5'); H0M14-SUB1 @ 18:05 (6.5'); H0M14-SUB2 @ 18:25 (19')

Visitors on site: Kevin Jones

(see back) →

Changes from plans/specifications and other special orders and important decisions:

- No dep at H0M6 due to low recovery
- Boring FAA2 cut; would likely only have road fill in top 20' (max boring depth).

Weather conditions: Sunny + windy

Important telephone calls:

Personnel on site: MED, APW, Geotek AK

Signature: Morgan Donohue

Date: 6/15/21

Boring terminated @ 20'

18:45

APW + Geotek offsite

# FIELD ACTIVITIES DAILY LOG

Date 6/16/21  
 Sheet 1 of 1  
 Project No. 106031

Project Name: Homer Airport PFAS

Field activity subject: GW sampling

Description of daily activities and events:

- 8:30 MED + APW on-site
- 9:00 started sampling HOM14  
 3 well volumes purged before sample collected  
Samples: HOM14-GW @ 10:00
- 10:15 Demob from HOM14
- 10:25 Start @ K03  
 3 well volumes purged before sample collected; unable to collect stability parameters due to low well recharge rate  
Sample: K03-GW @ 11:10
- 11:25 Demob from K03
- 11:43 Start on HOM5  
 Parameters stabilized prior to sample collection  
Samples: HOM5-GW @ 12:30 and HOM5D-GW @ 12:20
- 13:15 Demob from HOM5
- 13:25 Start @ HOM6  
 3 well volumes purged prior to sample collection; unable to collect parameters due to low recharge rate  
Sample: HOM6-GW @ 14:10 (PFAS + POL)
- 15:12 Demob from HOM6
- 15:37 Start @ FAA-MW-1 (existing FAA GW monitor well near FAA1 sample location)  
 3 well volumes purged prior to sample collection  
Sample: FAA-MW-1
- 16:35 Demob from FAA-MW-1
- 16:41 Start @ FAA-MW-2 (existing FAA well near K01)  
 3 well volumes purged prior to sample collection  
Sample: FAA-MW-2 (PFAS + POL; previous samples just PFAS, except HOM6 which also had POL)
- 17:40 Demob
- 17:50 MED + APW off-site

Visitors on site: \_\_\_\_\_

Changes from plans/specifications and other special orders and important decisions:

Added 2 existing FAA GW monitoring wells; POL added to analytical suite for FAA-MW-2 due to well's existing to monitor potential petroleum GW contain

Weather conditions: Sunny + breezy AM; overcast + drizzling PM

Important telephone calls: \_\_\_\_\_

Personnel on site: MED, APW

Signature: Morgan Donohue

Date: 6/16/21

# FIELD ACTIVITIES DAILY LOG

Date 6/17  
 Sheet 1 of 1  
 Project No. 106031

Project Name: Homer Airport PFAS

Field activity subject: Soil, surface H<sub>2</sub>O, + sediments sampling

Description of daily activities and events: \_\_\_\_\_

8:30	MED + APW on-site
8:45	Collected HOM-SW-1
9:30	" HOM-SW-2
9:45	HOM1-SS
9:50	HOM3-SS
9:58	HOM7-SS
10:05	HOM-SW-3 (formerly HOM8-SW)
10:15	HOM10-SS
10:23	HOM13-SS
10:44	HOM16-SS
11:55	HOM18-SS
11:05	HOM25WE-4
11:19	HOM2-SS
11:36	HOM9-SS
11:37	HOM12-SS
11:45	HOM15-SS
12:15	LL-SW
12:20	LL-SED
13:00	HOM19-SS (formerly FAA2) → same location
12:50	HOM-SW-5
13:30	BL-SW
13:35	BL-SED
13:50	FB
12:00	MED offsite, APW offsite to sediment sample locations
14:00	APW out of field

Visitors on site: Kevin Jones

Changes from plans/specifications and other special orders and important decisions:

- Surface H<sub>2</sub>O naming convention sed to HOM-SW-#

Weather conditions: Sunny in AM, drizzly in PM

Important telephone calls: \_\_\_\_\_

Personnel on site: MED, APW

Signature: Morgan Donohue

Date: 6/17



# FIELD ACTIVITIES DAILY LOG

Date 6/18/21

Sheet 1 of 1

Project No. 106031

Project Name: Homer Airport PFAS

Field activity subject: Drinking H<sub>2</sub>O sampling

Description of daily activities and events:

4:00 MED + APW Leave hotel

9:20 Arrive at 4104 Kachemak Drive, realize peri-pump is back at the hotel, head back to retrieve it

9:55 Begin @ DW-1

Pipe in pump house before treatment system

Drain pipe ~10min after pump starts

Move DW-1 to pump head outside of pump house @ ~10:34

Parameters stabilized in well prior to sample collection

Sample: DW-1

Owners not home; air bubbles noted during pumping

11:20 Demob from DW-1

11:30 Start @ DW-2 (3059 Kachemak Drive; owner is Mike Yourkowski)

Parameters stabilized prior to sample collection ↳ monitoring well only

Samples: DW-2 @ 12:10 and DW-102 @ 12:00

Well next to greenhouse

12:15 Demob from DW-2; Mike showed us a second monitoring well across from the main house

Started @ DW-3

3 well volumes purged prior to sample collection

Samples; DW-3 @ 13:55; GAC System @ 12:50; and FB-2 @ 13:15

14:00 MED + APW off-site, back to hotel for lunch

15:00 MED + APW organize field forms, COCs, etc

17:45 MED + APW done for the day

Visitors on site: Mike Yourkowski

Changes from plans/specifications and other special orders and important decisions:

Wells @ 3059 Kachemak Drive not drinking water

Well @ 4104 Kachemak not drinking water but owner would like to use it for that

Weather conditions: Cloudy & overcast

Important telephone calls:

Personnel on site: MED, APW

Signature: Morgan Donohue

Date: 6/18/21

SOIL SAMPLE COLLECTION LOG

Project Number: 106031-002 Project Name: DOT&PF PFAS Page | of |  
 Sampler: APWMED

Date	Sample ID	Location	Sample Time	Depth (ft)	Sample Type	PID Reading	Analyses
6/17	BL-SED	Beluga Lake	13:35	-	Sed	N/A	PFAS
6/17	LL-SED	Lambert Lake	12:20	-	↓	N/A	PFAS
-	LLD-SED	No sed. dup collected	-	-	↓	-	-
6/17	HOM1-SS		9:45	0-0.5	Soil	N/A	PFAS
6/17	HOM2-SS		11:19	0-0.5	↓	N/A	PFAS
6/17	HOM3-SS		9:50	0-0.5	↓	N/A	PFAS
6/14	HOM4-SS		18:45	1.25	↓	2.2	PFAS
6/15	HOM5-SS		13:25	1	↓	1.3	PFAS
6/15	HOM6-SS		14:38	0-1	↓	0.6	PFAS, POL
6/17	HOM7-SS		9:58	0-0.5	↓	N/A	PFAS
6/17	HOM9-SS		11:30	0-0.5	↓	N/A	PFAS
6/17	HOM10-SS		10:15	0-0.5	↓	N/A	PFAS
6/14	HOM11-SS		12:10	0.5-2	↓	-	PFAS
6/17	HOM12-SS		11:37	0-0.5	↓	N/A	PFAS
6/17	HOM13-SS		10:23	0-0.5	↓	N/A	PFAS
6/15	HOM14-SS		17:45	0.5	↓	0.5	PFAS
6/17	HOM15-SS		11:45	0-0.5	↓	N/A	PFAS
6/17	HOM16-SS		10:44	0-0.5	↓	N/A	PFAS
6/17	HOM18-SS		11:55	0-0.5	↓	N/A	PFAS
6/15	FAA1-SS		11:50	0.5	↓	-	-
-	FAA2-SS	Boring cut, no samples	-	-	-	-	-
6/15	KD1-SS		9:00	0-0.6	↓	0	PFAS
6/14	KD2-SS		17:00	0.5	↓	12.6	PFAS
6/15	KD3-SS		16:30	0.5	↓	0.9	PFAS
<del>6/15</del>	<del>HOM8D-SS</del>		<del>14:38</del>	<del>0-1</del>	<del>↓</del>	<del>0.6</del>	<del>PFAS, POL</del>
<del>6/17</del>	<del>HOM7D-SS</del>		<del>9:58</del>	<del>0-0.5</del>	<del>↓</del>	<del>N/A</del>	<del>PFAS</del>
6/14	HOM11D-SS		12:10	0.5-2	↓	N/A	PFAS
<del>6/17</del>	<del>FB</del>		<del>13:50</del>	<del>0-0.5</del>	<del>↓</del>	<del>-</del>	<del>-</del>
6/17	HOM19-SS	Former FAA2 site	13:00	0-1	Soil	N/A	PFAS

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

## TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT - PF  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy, breezy, light rain Air Temp. (°F) \_\_\_\_\_

Project No. 106831  
 Date 6/16/21  
 TWP ID HOM5  
 Time started 11:43  
 Time completed 13:15

Sample No. HOM5-GW  
 Duplicate HOM5 D-GW  
 Equipment Blank -

Time 12:30 Analyses PFAS, POL  
 Time 12:20 Analyses PFAS, POL  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low flow  
 Pumping Start 11:49  
 Purge Rate (gal./min.) 0.02  
 Pumping End 12:40  
 Pump Set Depth Below TOC (ft.) \_\_\_\_\_  
 KuriTec Tubing (ft.) \_\_\_\_\_  
 TruPoly Tubing (ft.) 30  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 1 in PVC  
 TOC to GS (ft.) 4.6  
 Depth of Well Below TOC (ft.) 24.16  
 Depth to Water Below TOC (ft.) 6.7  
 Feet of Water in Well 17.46  
 Gallons per foot 0.04  
 Gallons in Well 0.70  
 Purge Water Volume (gal.) ~3

Purge Water Disposal GAC system

Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations Murky H<sub>2</sub>O at first; ran until clear before parameters

17.46  
 0.04  
 17.46  
 0.04  
 69.84

### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
12:09	4.6	2.06	412.9	5.87	87.0	Clear
12:12	4.6	0.99	412.3	5.95	58.0	"
12:15	4.7	0.72	412.5	5.97	41.9	"
12:18	4.6	0.56	411.2	5.97	32.6	"
12:21	4.6	0.49	410.7	5.97	25.3	"
12:24	4.6	0.45	411.1	5.98	19.7	"
12:27	4.6	0.41	410.5	5.98	15.5	"
12:30	4.7	0.41	410.6	5.97	13.5	"

Notes \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID HOM5

### TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT-PF  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy, breezy, light rain, chilly Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/16/20  
 TWP ID HOM6  
 Time started 13:25  
 Time completed 15:12

Sample No. HOM6-GW  
 Duplicate -  
 Equipment Blank -

Time 14:10 Analyses PFAS, POLs  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low-flow  
 Pumping Start 13:30  
 Purge Rate (gal./min.) 0.2, down to 0.1  
 Pumping End 15:12  
 Pump Set Depth Below TOC (ft.) 10.5  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 25  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 1 in PVC  
 TOC to GS (ft.) 5  
 Depth of Well Below TOC (ft.) 19.32  
 Depth to Water Below TOC (ft.) 9.54  
 Feet of Water in Well 9.78  
 Gallons per foot 0.04  
 Gallons in Well 0.39  
 Purge Water Volume (gal.) \_\_\_\_\_

Purge Water Disposal GAC System

Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations First H<sub>2</sub>O grey/brown; ran 'til clear

#### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
<i>Unable to take parameters due to low recharge rate</i>						

Notes Pumped well dry around 13:40, let sit 45min + lowered pump to 0.75 gal/min, turned pump back on + got 1 min of full flow before well dry again. Will purge 3x well volume (1.2 gal) and then sample

#### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID HOM6

### TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT - PF  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Sunny + breezy Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/16/21  
 TWP ID HOM14  
 Time started 9:00  
 Time completed 10:15

Sample No. HOM14-GW Time 10:00 Analyses PFAS  
 Duplicate - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Equipment Blank - Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low-flow 41.0  
 Pumping Start 9:19 2 0.2  
 Purge Rate (gal./min.) 0.2 8 2.0  
 Pumping End 10:00  
 Pump Set Depth Below TOC (ft.) ~~13~~ ~ 7.5  
 KuriTec Tubing (ft.) \_\_\_\_\_  
 - TruPoly Tubing (ft.) 25  
 - Silicone Tubing (ft.) ~ 0.6 (@ pump)

Diameter and Type of Casing 1 in PVC  
 TOC to GS (ft.) 4.5  
 Depth of Well Below TOC (ft.) ~~24.5~~ 19.9  
 Depth to Water Below TOC (ft.) 6.51  
 Feet of Water in Well 18.99  
 Gallons per foot 0.04  
 Gallons in Well 0.76  
 Purge Water Volume (gal.) 8.2

5.14  
 10.90  
 6.51  
18.99

Purge Water Disposal GAC system  
 Field Parameter Instrument YSI Prof + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations Grey H<sub>2</sub>O when pump started, ran until clear before parameters

#### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
9:36	5.3	2.45	378.0	5.71	101.6	Clear
9:39	5.4	1.46	377.7	5.83	83.0	"
9:42	5.4	1.60	376.8	5.86	71.4	"
9:45	5.4	0.81	375.5	5.88	64.0	"
9:48	5.4	0.68	374.4	5.89	59.3	"
9:51	5.4	0.61	373.7	5.90	56.2	"
9:54	5.4	0.59	372.7	5.91	55.5	"
9:57	5.5	0.83	372.0	5.91	61.1	"
10:00						
10:03						

Notes \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

#### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID HOM14

### TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT - PF  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Overcast, breezy Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/16/21  
 TWP ID K03  
 Time started 10:25  
 Time completed 11:25

Sample No. K03-GW  
 Duplicate -  
 Equipment Blank -

Time 11:10 Analyses PFAS  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low-flow  
 Pumping Start 10:34  
 Purge Rate (gal./min.) 0.2 to 0.1  
 Pumping End 11:21  
 Pump Set Depth Below TOC (ft.) -9  
 KuriTec Tubing (ft.) -  
 - TruPoly Tubing (ft.) 20  
 - Silicone Tubing (ft.) -1 (at pump only)

Diameter and Type of Casing 1 in PVC  
 TOC to GS (ft.) 4.7  
 Depth of Well Below TOC (ft.) 19.3  
 Depth to Water Below TOC (ft.) 8.2  
 Feet of Water in Well 11.1  
 Gallons per foot 0.04  
 Gallons in Well 0.44  
 Purge Water Volume (gal.) ~1.2

Purge Water Disposal GAC system  
 Field Parameter Instrument YSI Prof + Circle one: Parameters stabilized or 3 well volumes purged  
 Sample Observations 1st H<sub>2</sub>O cloudy & grey; ran til clear before parameters

#### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
-	<u>None collected due to low recharge rate</u>					

Notes Low recharge rate; well dry to almost dry @ ~10:45. Lowered pump rate & then paused for ~3 min to recharge.  
\* 3 well volumes purged during development prior to sampling due to low recharge rate \*

#### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID K03

### TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT-PP  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy/overcast, breezy Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/16/21  
 TWP ID FAA-MW-1  
 Time started 15:37  
 Time completed 16:35

Sample No. FAA-MW-1  
 Duplicate -  
 Equipment Blank -

Time 16:30 Analyses PFAS  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low-flow  
 Pumping Start 15:45  
 Purge Rate (gal./min.) 0.2  
 Pumping End 16:35  
 Pump Set Depth Below TOC (ft.) 23.5  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 42.00  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 2in, PVC  
 TOC to GS (ft.) -0.23  
 Depth of Well Below TOC (ft.) 37.80  
 Depth to Water Below TOC (ft.) 22.48  
 Feet of Water in Well 15.32  
 Gallons per foot 0.17  
 Gallons in Well 2.60  
 Purge Water Volume (gal.) 7.5

Purge Water Disposal GAC System

Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations \_\_\_\_\_

#### FIELD PARAMETERS

Time	Temp.°C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
15:47	7.6	2.86	229.1	5.96	237.8	Clear
15:50	6.1	0.70	213.0	5.91	204.0	"
15:53	6.0	0.64	211.5	5.94	183.7	"
15:56	5.9	0.58	210.2	5.96	171.1	"
15:59	6.0	0.65	208.4	5.98	160.9	"
16:02	5.8	0.77	205.5	5.96	154.3	"
16:05	5.7	0.65	206.1	5.95	148.8	"
16:08	6.0	0.49	208.9	5.95	141.5	"
16:11	5.9	0.42	209.3	5.94	134.6	"
16:14	6.0	0.42	209.8	5.94	128.7	"
16:17	6.6	0.35	209.8	5.93	123.0	"

See back →

Notes Existing FAA well near FAA1 sample location.

#### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID FAA-MW-1

<u>Time</u>	<u>Temp (°C)</u>	<u>DO</u>	<u>Conductivity</u>	<u>pH</u>	<u>ORP</u>	<u>Turbidity</u>
16:20	6.0	0.34	208.9	5.94	117.6	Clear
16:23	6.2	0.32	208.5	5.93	112.4	"
16:26						
16:29						



## TEMPORARY WELL POINT SAMPLING LOG

Owner/Client DOT - PF  
 Location Homer Airport  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy/overcast, lite breeze Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/16/21  
 TWP ID FAA-MW-2  
 Time started 16:41  
 Time completed 17:40

Sample No. FAA-MW-2 Time 17:25 Analyses PFAS, POL  
 Duplicate - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Equipment Blank - Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low flow  
 Pumping Start 16:50  
 Purge Rate (gal./min.) 0.2  
 Pumping End 17:30  
 Pump Set Depth Below TOC (ft.) \_\_\_\_\_  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 42  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 2in, PVC  
 TOC to GS (ft.) -0.25  
 Depth of Well Below TOC (ft.) 37.65  
 Depth to Water Below TOC (ft.) 28.84  
 Feet of Water in Well 8.81  
 Gallons per foot 0.17  
 Gallons in Well 1.50  
 Purge Water Volume (gal.) 4.5

Purge Water Disposal GAC system  
 Field Parameter Instrument YSI Pro6 + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations Air bubbles in line throughout sampling

### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
17:00	7.3	0.61	611	6.14	-14.7	Clear
17:03	7.3	0.54	570	6.13	-38.1	"
17:06	7.3	0.51	561	6.14	-53.7	"
17:09	7.4	0.49	555	6.14	-65.9	"
17:12	7.3	0.47	552	6.15	-77.8	"
17:15	7.3	0.46	550	6.14	-94.8	Grey/brown murky
17:18	7.3	0.49	580	6.18	-115.8	Clear
17:21	7.3	0.43	555	6.15	-145.9	"

Notes <sup>Existing</sup> FAA MW #11  
1st H<sub>2</sub>O clear, but air bubbles; grey-brown water after ~2min pumping, cleared after ~1min. 2nd H<sub>2</sub>O reading 28.95 ft bTOC. Air bubbles still present.  
Started parameters @ 17:00 to see if it stabilized before 3 well volumes purged

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID FAA-MW-2  
(aka MW-11)

Drinking H<sub>2</sub>O Well  
~~TEMPORARY WELL POINT~~ (MED, G18)  
**SAMPLING LOG**

Owner/Client John Evens  
 Location 4104 Kachemak Drive  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy & overcast Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/18/21  
 TWP ID DW-1  
 Time started 9:55  
 Time completed 10:30

Sample No. DW-1 Time \_\_\_\_\_ Analyses PFAS  
 Duplicate - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Equipment Blank - Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low flow  
 Pumping Start 10:08  
 Purge Rate (gal./min.) 0.02  
 Pumping End 10:19  
 Pump Set Depth Below TOC (ft.) 1  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 30  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 1in pump house  
 TOC to GS (ft.) 0.7 (above floor)  
 Depth of Well Below TOC (ft.) 25.2  
 Depth to Water Below TOC (ft.) 0  
 Feet of Water in Well 25.2  
 Gallons per foot 0.04  
 Gallons in Well 1.0  
 Purge Water Volume (gal.) ~1.0

Purge Water Disposal GAC System  
 Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations \_\_\_\_\_

### FIELD PARAMETERS

Time	Temp.°C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
10:10	5.5	4.03	582	5.88	27.3	Clear
10:13	5.1	0.89	539	6.07	-16.0	"
10:16	5.7	0.82	498.4	6.24	0.5	"
10:19	Well apparently dry					
10:22						
10:25						

Notes Pump house in driveway next to shop; spigot before pressure tank  
\* Switched to pump head outside pump house \*  
Due to dry pipe

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID DW-1

Drinking H<sub>2</sub>O Well  
**TEMPORARY WELL POINT  
 SAMPLING LOG**

Owner/Client John Evans  
 Location 4104 Kacheneh Drive  
 Sampling Personnel MED/APW  
 Weather Conditions Cloudy, overcast Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/18/21  
 TWP ID DW-1  
 Time started 10:34  
 Time completed 11:20

Sample No. DW-1 Time 11:05 Analyses PFAS  
 Duplicate - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Equipment Blank - Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low flow, peri-pump  
 Pumping Start 10:40  
 Purge Rate (gal./min.) 0.02  
 Pumping End 11:05  
 Pump Set Depth Below TOC (ft.) 30  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 40  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 6in, metal  
 TOC to GS (ft.) 1.9  
 Depth of Well Below TOC (ft.) 34.15  
 Depth to Water Below TOC (ft.) 28.56  
 Feet of Water in Well 5.59  
 Gallons per foot 1.5  
 Gallons in Well 8.4  
 Purge Water Volume (gal.) 0.5

Purge Water Disposal GAC System  
 Field Parameter Instrument YSI Prod. + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations Air bubbles through out pumping

### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
10:42	7.3	1.99	620	6.55	7.6	Clear
10:45	6.7	0.39	615	6.86	-85.8	"
10:48	6.7	0.26	615	6.95	-111.3	"
10:51	6.6	0.23	615	7.00	-121.9	"
10:54	6.8	0.18	617	7.03	-129.8	"
10:57	6.8	0.18	616	7.05	-134.9	"
11:00	7.0	0.17	621	7.07	-139.6	"

Notes \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

6  
1.5

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID DW-1

Drinking H<sub>2</sub>O Well (MFD, 6/18)  
**TEMPORARY WELL POINT  
 SAMPLING LOG**

Owner/Client Mike Yourkowski  
 Location 3059 Kachemab Drive  
 Sampling Personnel MEB/APW  
 Weather Conditions Cloudy, overcast Air Temp. (°F) \_\_\_\_\_

Project No. 106031  
 Date 6/18/21  
 TWP ID DW-2  
 Time started 11:30  
 Time completed 12:15

Sample No. DW-2  
 Duplicate ~~DW-2~~ DW-102 (MFD 6/18)  
 Equipment Blank -

Time 12:10 Analyses PFAS  
 Time 12:00 Analyses PFAS  
 Time \_\_\_\_\_ Analyses \_\_\_\_\_

Purging Method Low flow, perist pump  
 Pumping Start 11:40  
 Purge Rate (gal./min.) 0.02  
 Pumping End 12:11  
 Pump Set Depth Below TOC (ft.) ~9.0  
 KuriTec Tubing (ft.) -  
 TruPoly Tubing (ft.) 56  
 Silicone Tubing (ft.) 1

Diameter and Type of Casing 4.5 PVC  
 TOC to GS (ft.) 1.99  
 Depth of Well Below TOC (ft.) ~~851.00~~  
 Depth to Water Below TOC (ft.) 8.15  
 Feet of Water in Well 42.85  
 Gallons per foot ~~2.31~~ 0.92  
 Gallons in Well 39.4  
 Purge Water Volume (gal.) 0.62

Purge Water Disposal GAC System  
 Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations \_\_\_\_\_

### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
11:46	4.7	0.59	99.6	6.25	55.8	Clear
11:49	4.6	0.41	87.2	5.95	80.5	"
11:52	4.5	0.35	86.1	5.84	88.2	"
11:55	4.5	0.32	79.7	5.77	94.7	"
11:58	4.5	0.29	74.5	5.72	99.4	"
12:01	4.6	0.26	74.1	5.69	103.5	"
12:04	4.5	0.26	73.5	5.67	107.0	"
12:07	4.6	0.26	72.6	5.64	110.9	"

Notes Private monitoring well, not used for drinking  
By greenhouse & netted enclosure

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2	3	4
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

TWP ID DW-2

## TEMPORARY WELL POINT SAMPLING LOG

Owner/Client Mide Yourkowski Project No. 106031  
 Location 3059 Kachemab Drive Date 6/18/21  
 Sampling Personnel MEO/APW TWP ID DW-3  
 Weather Conditions Overcast & cloudy Air Temp. (°F) \_\_\_\_\_ Time started 12:15  
 Time completed 14:00

FB FR-2 ~~12:55~~ 13:15 (MEO, C/18) PFAS  
 Sample No. DW-3 Time 13:55 Analyses PFAS  
 Duplicate - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 Equipment Blank - Time \_\_\_\_\_ Analyses \_\_\_\_\_  
 GAC Equipment GAC System 12:50 PFAS

Purging Method Low flow, per pump Diameter and Type of Casing 6in, PVC  
 Pumping Start 12:23 TOC to GS (ft.) 2.29  
 Purge Rate (gal./min.) 0.02 Depth of Well Below TOC (ft.) 16.9  
 Pumping End 13:55 Depth to Water Below TOC (ft.) 11.54  
 Feet of Water in Well +5 (MEO) 5.36  
 Pump Set Depth Below TOC (ft.) 12.5 Gallons per foot 1.5  
 KuriTec Tubing (ft.) - Gallons in Well 8.04  
 TruPoly Tubing (ft.) 20 Purge Water Volume (gal.) ~24  
 Silicone Tubing (ft.) 1

Purge Water Disposal GAC System  
 Field Parameter Instrument YSI Prof. + Circle one: Parameters stabilized or >3 well volumes purged  
 Sample Observations \_\_\_\_\_

### FIELD PARAMETERS

Time	Temp. °C [± 3%]	Dissolved Oxygen (mg/L) [±10%]	Conductivity (µS/cm) [± 3%]	pH [± 0.1]	ORP (mV) [± 10 mV]	Water Clarity (visual)
<del>12:24</del> <sup>MEO</sup> <sub>(12:24)</sub>	4.7	4.99	117.3	5.62	170.4	Clear
12:28	4.8	4.39	115.1	5.84	175.7	Grey
12:31	4.6	4.43	99.8	5.88	182.4	"
12:34	4.7	4.80	93.9	5.90	188.4	Clear
12:37	4.7	4.90	95.8	5.90	194.8	"
12:40	4.6	4.95	96.6	5.90	199.9	"
12:43	4.7	5.03	96.2	5.89	204.5	"
12:46	4.6	5.08	92.9	5.89	208.2	"
12:49	4.6	5.12	94.4	5.87	211.8	"
12:52	4.7	5.19	91.3	5.86	214.2	"
12:55	4.8	5.21	90.9	5.83	217.9	"

Notes Private monitoring well, not used for drinking water  
Across from main house under a tree, stinging nettles nearby  
Grey H<sub>2</sub>O @ ~ 12:27; well pumped dry (MEO, C/18)

See back

### WELL CASING VOLUMES

Casing Diameter	SP16 (0.65")	0.75"	1"	1.25"	2"	3"	4"
Gallons per lineal foot	0.02	0.02	0.04	0.08	0.17	0.38	0.66

Notes:  
 TOC= top of casing, GS = ground surface, TWP = temporary well point

93.4  
 12

TWP ID DW-3

	Temp	DO	Conduct.	pH	ORP	TSS	Clarity
12:58	4.7	5.33	96.4	5.82	221.2		Clear
13:01	4.9	5.46	87.7	5.79	225.2		"
13:04	4.7	5.52	83.1	5.76	228.5		"
13:07	4.8	5.51	85.2	5.72	231.7		"
13:10	4.7	5.53	82.0	5.72	234.4		"
13:13	4.7	5.51	79.6	5.71	236.9		"
13:16	4.8	5.36	85.0	5.72	238.0		"
13:19	4.7	5.36	<del>86.5</del>	5.72	239.7		"
13:22	4.8	5.11	88.1	5.77	238.9		"
13:25	4.7	5.21	99.6	5.81	239.5		"
13:28	4.7	5.18	96.0	5.75	241.9		"
13:31	4.9	5.04	97.2	5.76	242.5		"
13:34	4.9	4.92	99.7	5.78	243.0		"
13:37	5.3	4.87	99.4	5.77	243.9		"
13:40	5.2	4.83	99.6	5.77	244.3		"
13:43	5.3	4.88	99.2	5.75	245.3		"
13:46	5.5	4.73	100.3	5.77	245.9		"
13:49	5.4	4.81	99.1	5.76	247.1		"
13:52	<del>5.5</del> 5.3	4.81	98.8	5.76	247.9		"

Cleaned out sed. in  
Y5I between these two

Appendix C  
**Boring Logs**

**APPENDIX C: BORING LOGS**

Shannon & Wilson, Inc. (S&W), uses a soil identification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following pages. Soil descriptions are based on visual-manual procedures (ASTM D2488) and laboratory testing procedures (ASTM D2487), if performed.

**S&W INORGANIC SOIL CONSTITUENT DEFINITIONS**

CONSTITUENT <sup>2</sup>	FINE-GRAINED SOILS (50% or more fines) <sup>1</sup>	COARSE-GRAINED SOILS (less than 50% fines) <sup>1</sup>
Major	<b>Silt, Lean Clay, Elastic Silt,<sup>3</sup> or Fat Clay</b>	<b>Sand or Gravel<sup>4</sup></b>
Modifying (Secondary) Precedes major constituent	30% or more coarse-grained: <b>Sandy or Gravelly<sup>4</sup></b>	More than 12% fine-grained: <b>Silty or Clayey<sup>3</sup></b>
Minor Follows major constituent	15% to 30% coarse-grained: <b>with Sand or with Gravel<sup>4</sup></b> 30% or more total coarse-grained and lesser coarse-grained constituent is 15% or more: <b>with Sand or with Gravel<sup>5</sup></b>	5% to 12% fine-grained: <b>with Silt or with Clay<sup>3</sup></b> 15% or more of a second coarse-grained constituent: <b>with Sand or with Gravel<sup>5</sup></b>

<sup>1</sup>All percentages are by weight of total specimen passing a 3-inch sieve.  
<sup>2</sup>The order of terms is: *Modifying Major with Minor*.  
<sup>3</sup>Determined based on behavior.  
<sup>4</sup>Determined based on which constituent comprises a larger percentage.  
<sup>5</sup>Whichever is the lesser constituent.

**MOISTURE CONTENT TERMS**

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

**STANDARD PENETRATION TEST (SPT) SPECIFICATIONS**

Hammer:	140 pounds with a 30-inch free fall. Rope on 6- to 10-inch-diam. cathead 2-1/4 rope turns, > 100 rpm
	NOTE: If automatic hammers are used, blow counts shown on boring logs should be adjusted to account for efficiency of hammer.
Sampler:	10 to 30 inches long Shoe I.D. = 1.375 inches Barrel I.D. = 1.5 inches Barrel O.D. = 2 inches
N-Value:	Sum blow counts for second and third 6-inch increments. Refusal: 50 blows for 6 inches or less; 10 blows for 0 inches.
	NOTE: Penetration resistances (N-values) shown on boring logs are as recorded in the field and have not been corrected for hammer efficiency, overburden, or other factors.











**PARTICLE SIZE DEFINITIONS**

DESCRIPTION	SIEVE NUMBER AND/OR APPROXIMATE SIZE
FINES	< #200 (0.075 mm = 0.003 in.)
SAND Fine Medium Coarse	#200 to #40 (0.075 to 0.4 mm; 0.003 to 0.02 in.) #40 to #10 (0.4 to 2 mm; 0.02 to 0.08 in.) #10 to #4 (2 to 4.75 mm; 0.08 to 0.187 in.)
GRAVEL Fine Coarse	#4 to 3/4 in. (4.75 to 19 mm; 0.187 to 0.75 in.) 3/4 to 3 in. (19 to 76 mm)
COBBLES	3 to 12 in. (76 to 305 mm)
BOULDERS	> 12 in. (305 mm)

**RELATIVE DENSITY / CONSISTENCY**

COHESIONLESS SOILS		COHESIVE SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
< 4	Very loose	< 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
> 50	Very dense	15 - 30	Very stiff
		> 30	Hard

**WELL AND BACKFILL SYMBOLS**

	Bentonite Cement Grout		Surface Cement Seal
	Bentonite Grout		Asphalt or Cap
	Bentonite Chips		Slough
	Silica Sand		Inclinometer or Non-perforated Casing
	Perforated or Screened Casing		Vibrating Wire Piezometer

**PERCENTAGES TERMS<sup>1,2</sup>**

Trace	< 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

<sup>1</sup>Gravel, sand, and fines estimated by mass. Other constituents, such as organics, cobbles, and boulders, estimated by volume.

<sup>2</sup>Reprinted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

**SOIL DESCRIPTION AND LOG KEY**

November 2021
















106031-002

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Geotechnical and Environmental Consultants

**FIG. C-1**  
Sheet 1 of 3



**UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)**  
 (Modified From USACE Tech Memo 3-357, ASTM D2487, and ASTM D2488)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL	TYPICAL IDENTIFICATIONS
COARSE-GRAINED SOILS <i>(more than 50% retained on No. 200 sieve)</i>	Gravels <i>(more than 50% of coarse fraction retained on No. 4 sieve)</i>	Gravel <i>(less than 5% fines)</i>	GW 	Well-Graded Gravel; Well-Graded Gravel with Sand
			GP 	Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Silty or Clayey Gravel <i>(more than 12% fines)</i>	GM 	Silty Gravel; Silty Gravel with Sand
			GC 	Clayey Gravel; Clayey Gravel with Sand
	Sands <i>(50% or more of coarse fraction passes the No. 4 sieve)</i>	Sand <i>(less than 5% fines)</i>	SW 	Well-Graded Sand; Well-Graded Sand with Gravel
			SP 	Poorly Graded Sand; Poorly Graded Sand with Gravel
		Silty or Clayey Sand <i>(more than 12% fines)</i>	SM 	Silty Sand; Silty Sand with Gravel
			SC 	Clayey Sand; Clayey Sand with Gravel
FINE-GRAINED SOILS <i>(50% or more passes the No. 200 sieve)</i>	Silts and Clays <i>(liquid limit less than 50)</i>	Inorganic	ML 	Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
			CL 	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
		Organic	OL 	Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
	Silts and Clays <i>(liquid limit 50 or more)</i>	Inorganic	MH 	Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
			CH 	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
		Organic	OH 	Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor	PT 	Peat or other highly organic soils (see ASTM D4427)	

NOTE: No. 4 size = 4.75 mm = 0.187 in.; No. 200 size = 0.075 mm = 0.003 in.

**NOTES**

- Dual symbols (*symbols separated by a hyphen, i.e., SP-SM, Sand with Silt*) are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart. Graphics shown on the logs for these soil types are a combination of the two graphic symbols (e.g., SP and SM).
- Borderline symbols (*symbols separated by a slash, i.e., CL/ML, Lean Clay to Silt; SP-SM/SM, Sand with Silt to Silty Sand*) indicate that the soil properties are close to the defining boundary between two groups.

Homer DOT&PF PFAS  
 Homer Airport  
 Homer, Alaska

**SOIL DESCRIPTION  
 AND LOG KEY**

November 2021

106031-002

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**FIG. C-1**  
 Sheet 2 of 3

### GRADATION TERMS

Poorly Graded	Narrow range of grain sizes present or, within the range of grain sizes present, one or more sizes are missing (Gap Graded). Meets criteria in ASTM D2487, if tested.
Well-Graded	Full range and even distribution of grain sizes present. Meets criteria in ASTM D2487, if tested.

### CEMENTATION TERMS<sup>1</sup>

Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

### PLASTICITY<sup>2</sup>

DESCRIPTION	VISUAL-MANUAL CRITERIA	APPROX. PLASTICITY INDEX RANGE
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.	< 4
Low	A thread can barely be rolled and a lump cannot be formed when drier than the plastic limit.	4 to 10
Medium	A thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. A lump crumbles when drier than the plastic limit.	10 to 20
High	It takes considerable time rolling and kneading to reach the plastic limit. A thread can be rerolled several times after reaching the plastic limit. A lump can be formed without crumbling when drier than the plastic limit.	> 20

### ADDITIONAL TERMS

Mottled	Irregular patches of different colors.
Bioturbated	Soil disturbance or mixing by plants or animals.
Diamict	Nonsorted sediment; sand and gravel in silt and/or clay matrix.
Cuttings	Material brought to surface by drilling.
Slough	Material that caved from sides of borehole.
Sheared	Disturbed texture, mix of strengths.

### PARTICLE ANGULARITY AND SHAPE TERMS<sup>1</sup>

Angular	Sharp edges and unpolished planar surfaces.
Subangular	Similar to angular, but with rounded edges.
Subrounded	Nearly planar sides with well-rounded edges.
Rounded	Smoothly curved sides with no edges.
Flat	Width/thickness ratio > 3.
Elongated	Length/width ratio > 3.

### ACRONYMS AND ABBREVIATIONS

ATD	At Time of Drilling
Diam.	Diameter
Elev.	Elevation
ft.	Feet
FeO	Iron Oxide
gal.	Gallons
Horiz.	Horizontal
HSA	Hollow Stem Auger
I.D.	Inside Diameter
in.	Inches
lbs.	Pounds
MgO	Magnesium Oxide
mm	Millimeter
MnO	Manganese Oxide
NA	Not Applicable or Not Available
NP	Nonplastic
O.D.	Outside Diameter
OW	Observation Well
pcf	Pounds per Cubic Foot
PID	Photo-Ionization Detector
PMT	Pressuremeter Test
ppm	Parts per Million
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
rpm	Rotations per Minute
SPT	Standard Penetration Test
USCS	Unified Soil Classification System
q <sub>u</sub>	Unconfined Compressive Strength
VWP	Vibrating Wire Piezometer
Vert.	Vertical
WOH	Weight of Hammer
WOR	Weight of Rods
Wt.	Weight

### STRUCTURE TERMS<sup>1</sup>

Interbedded	Alternating layers of varying material or color with layers at least 1/4-inch thick; singular: bed.
Laminated	Alternating layers of varying material or color with layers less than 1/4-inch thick; singular: lamination.
Fissured	Breaks along definite planes or fractures with little resistance.
Slickensided	Fracture planes appear polished or glossy; sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps that resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## SOIL DESCRIPTION AND LOG KEY

November 2021

106031-002

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**FIG. C-1**  
Sheet 3 of 3

<sup>1</sup>Reprinted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

<sup>2</sup>Adapted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)
		Top soil.	0.2	•••••				
	1	Brown, Poorly Graded Sand with Silt and Gravel (SP-SM); moist; subangular to rounded gravel; medium to fine sand; nonplastic fines; trace organics.	1.4		0.2			
	2	Brown to orange, Silt with Gravel (ML); moist; subangular to rounded gravel; low to medium-plasticity fines.	5.0				SS (0.5')	5
	3	Brown, Sandy Silt with Gravel (ML); moist to 12 feet, then wet; subangular to rounded gravel; medium to fine sand; nonplastic to medium-plasticity fines.	15.0			During Drilling ▽	SUB1 (6.5')	10
		BOTTOM OF BORING BORING COMPLETED 6/15/2021					SUB2 (14.5')	15

Log: APW/MED Rev: AJ  
 Typ: WAP  
 GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

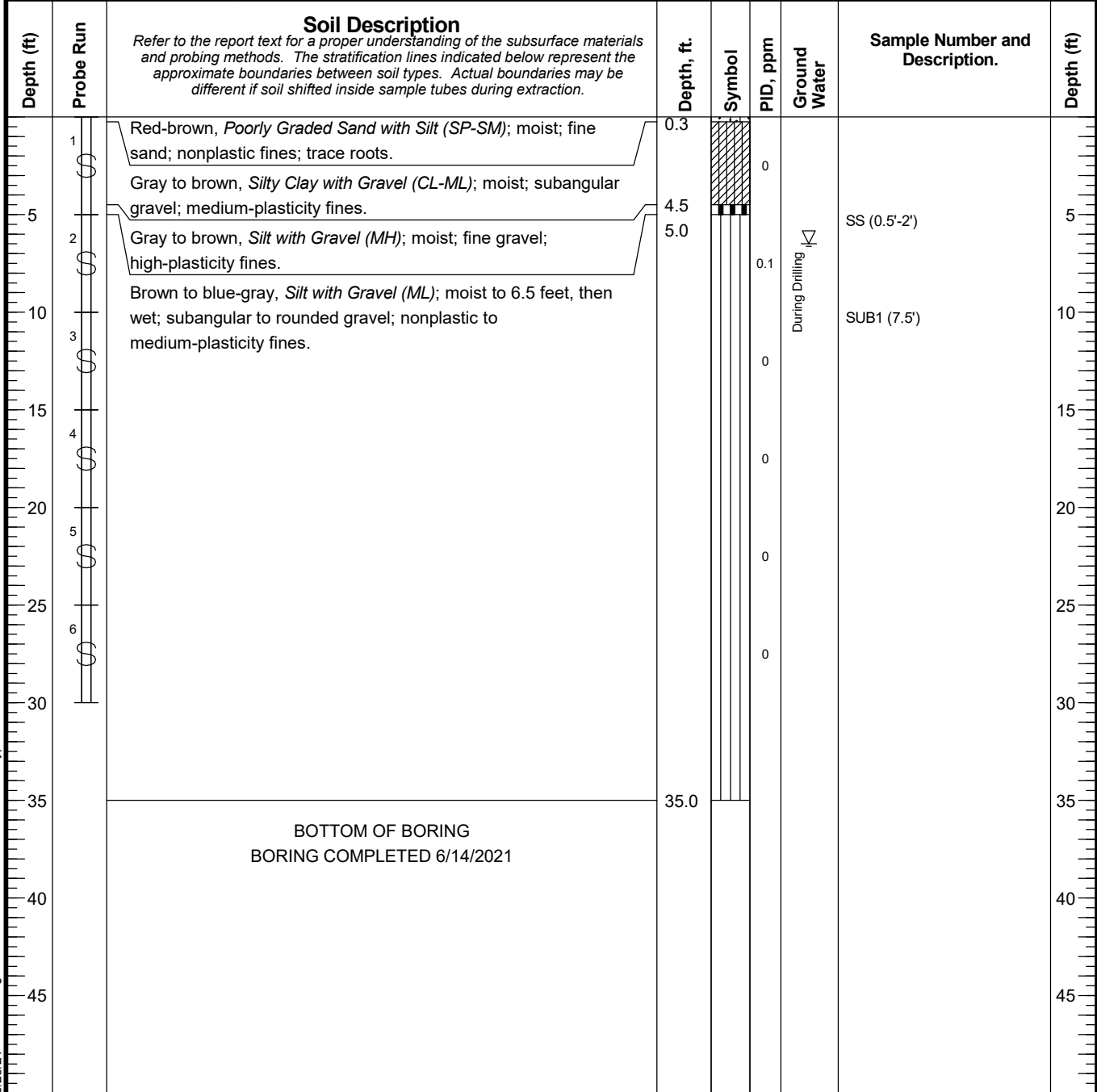
LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS Homer Airport Homer, Alaska	
<h2 style="margin: 0;">LOG OF GEOPROBE FAA1</h2>	
November 2021	106031-002
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. C-2</b>

# LOG OF GEOPROBE

Date Started	6/14/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/14/21			Typical Run Length	5 feet
Total Depth (ft)	35.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches



Typ: WAP  
 Rev: AJ  
 Log: APW/MED  
 10/28/21  
 GPJ 21-16604  
 GPJ 1028/21  
 AK 106031-002  
 GEOPROBE

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

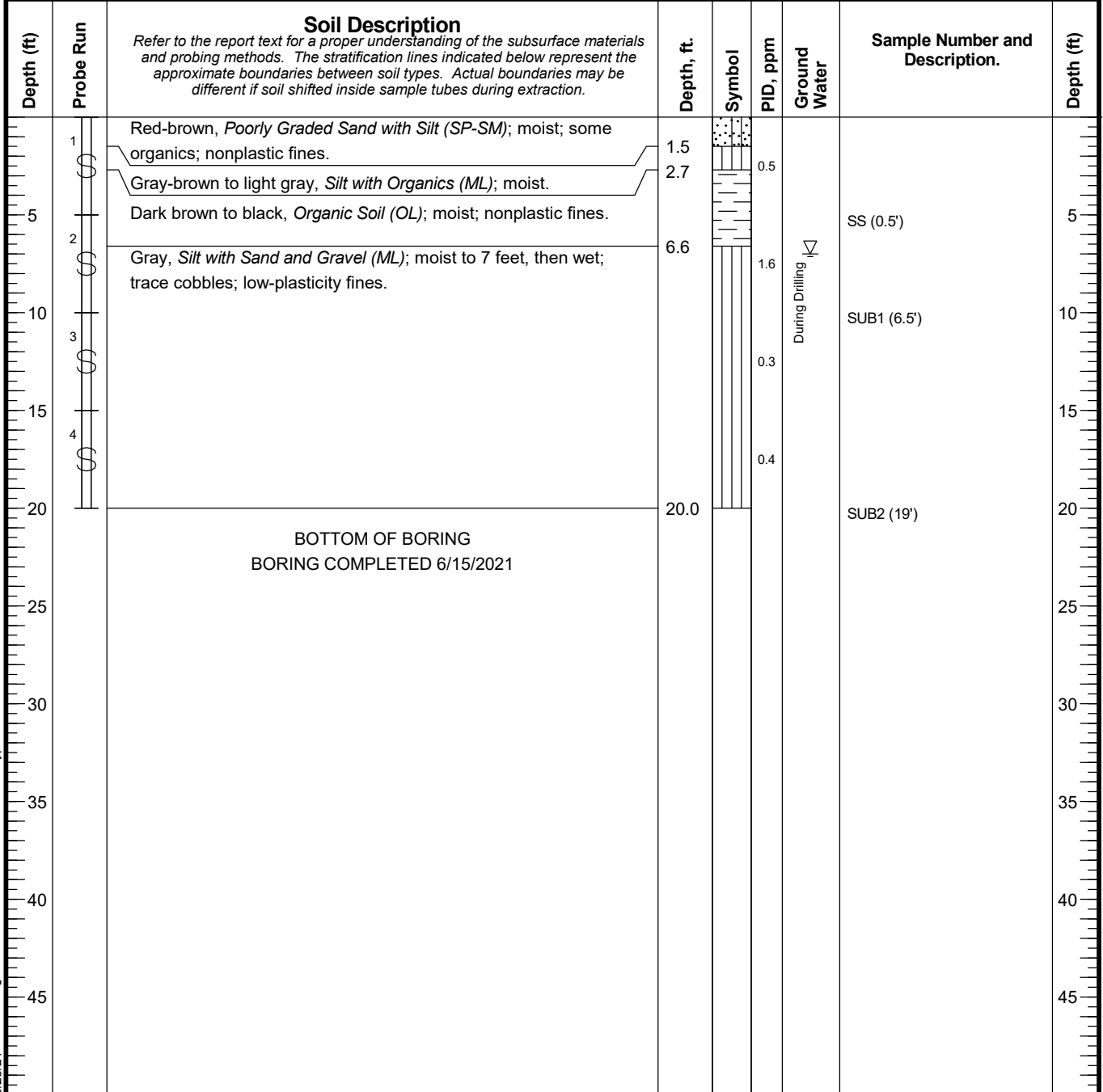
LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS Homer Airport Homer, Alaska	
<h2 style="margin: 0;">LOG OF GEOPROBE HOM11</h2>	
November 2021	106031-002
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. C-3</b>

# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches



Typ: WAP  
 Rev: AJ  
 Log: APW/MED  
 10/28/21  
 GPJ 21-16604  
 GPJ 106031-002  
 AK

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## LOG OF GEOPROBE HOM14

November 2021

106031-002

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Geotechnical and Environmental Consultants

**FIG. C-4**

# LOG OF GEOPROBE

Date Started	6/14/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/14/21			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)	
1	1	Dark brown to gray, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist; subangular to rounded gravel; coarse to medium sand; nonplastic fines; trace organics.	1.3	[Symbol]	2.2	During Drilling ▽	SS (1.25')	5	
5	2	Dark gray, <i>Silty Sand with Gravel (SP-SM)</i> ; moist to 7 feet bgs, then wet; subangular to rounded gravel; fine to medium sand; nonplastic to medium plasticity fines.	9.5	[Symbol]	1.8			SUB1 (9.5')	10
10	3	Black, <i>Poorly Graded Sand with Gravel (SP)</i> ; wet; fine gravel; coarse to medium sand; nonplastic fines.	9.7	[Symbol]	5.4			SUB2 (18')	15
15	4	Dark gray, <i>Poorly Graded Sand (SP)</i> ; wet; coarse to medium sand; nonplastic fines.	10.0	[Symbol]	2.7				20
20		Darn gray, <i>Silty Sand with Gravel (SP-SM)</i> ; wet; subangular to rounded gravel; medium to fine sand; nonplastic fines.	20.0	[Symbol]				25	
		BOTTOM OF BORING BORING COMPLETED 6/14/2021						30	
25								35	
30								40	
35								45	
40								50	
45								55	

GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21 Log: APW/MED Rev: AJ Typ: WAP

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## LOG OF GEOPROBE HOM4

November 2021

106031-002

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Geotechnical and Environmental Consultants

**FIG. C-5**

# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)	
1	1	Brown to gray, <i>Poorly Graded Sand (SP)</i> ; moist; coarse to fine sand; nonplastic fines; trace organics.	0.8	[Symbol]	1.3	During Drilling	SS (1')	5	
5	2	Brown, <i>Poorly Graded Sand with Silt and Organics (SP-SM)</i> ; moist; subangular to rounded gravel; nonplastic to low-plasticity fines.	5.0	[Symbol]	0.5			SUB1 (9')	10
10	3	Blue-gray; <i>Silt with Gravel (ML)</i> ; moist to 10 feet bgs, then wet; subangular to rounded gravel; nonplastic to low-plasticity fines.	10.0	[Symbol]	0.3			SUB2 (11.5')	15
15	4		15.0	[Symbol]	0.3				20
20	BOTTOM OF BORING BORING COMPLETED 6/15/2021		20.0					20	

Log: APW/MED Rev: AJ Typ: WAP  
GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

Estimated Water Level

Homer DOT&PF PFAS Homer Airport Homer, Alaska	
<b>LOG OF GEOPROBE HOM5</b>	
November 2021	106031-002
<b>SHANNON &amp; WILSON, INC.</b> <small>Geotechnical and Environmental Consultants</small>	<b>FIG. C-6</b>

# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)
		Top soil.	0.2					
		Brown, Poorly Graded Sand with Silt (SP-SM); moist; medium-plasticity fines.	0.3		0.6			
5	1						SS(1.25')	5
	2	Gray-blue, Silt with Gravel (ML); moist; subangular to rounded gravel; nonplastic to medium-plasticity fines.			0.4			
10							SUB1 (5')	10
	3				0.5			
15			15.0				SUB2 (15')	15
		BOTTOM OF BORING BORING COMPLETED 6/15/2021						

Typ: WAP  
 Rev: AJ  
 Log: APW/MED  
 10/28/21  
 GPJ 21-16604  
 GPJ 106031-002  
 AK

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## LOG OF GEOPROBE HOM6

November 2021

106031-002

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**FIG. C-7**



# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)
	1	Top soil.	0.2					
	1	Dark brown, <i>Silt with Gravel (ML)</i> ; moist; subangular to rounded gravel; nonplastic to high-plasticity fines.			0			
5	2	Brown and red-brown, <i>Sandy Silt with Gravel (ML)</i> ; moist; subangular to rounded gravel; coarse to fine sand; nonplastic to low-plasticity fines.	5.0		0		SS (0"-8")	5
10	3	Brown to red, <i>Silt with Gravel (ML)</i> ; moist; subangular to rounded gravel; nonplastic to high-plasticity fines; trace organics.	10.0		0.3			10
15	4						SUB1 (11.5')	15
20			20.0				SUB2 (15'-15.2')	20
		BOTTOM OF BORING BORING COMPLETED 6/15/2021						

Log: APW/MED Rev: AJ  
GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## LOG OF GEOPROBE KD1

November 2021

106031-002

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**FIG. C-8**

# LOG OF GEOPROBE

Date Started	6/14/21	Location	Homer Airport
Date Completed	6/14/21	Ground Elevation:	Approx. NA feet
Total Depth (ft)	20.0	Typical Run Length	5 feet
		Drilling Company:	GeoTek Alaska
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)
0.2	1	Top soil.	0.2					
0.5		Black, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist; fine ravel; medium to coarse sand; nonplastic fines; trace roots.	0.5		12.6			
5	2	Brown, <i>Silt (ML)</i> ; moist to 6 feet, then wet; medium-plasticity fines.	6.3			During Drilling	SS (0.5')	5
6.5		Dark brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; wet; medium-plasticity fines.	6.5		9.3			
7.3		Brown, <i>Silt (ML)</i> ; wet; medium-plasticity fines.	7.3					
7.5	3	Dark brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; wet; fine gravel; medium to coarse sand; nonplastic fines.	7.5		0.3		SUB1 (6')	10
15.3	4	Brown, <i>Silt with Gravel (ML)</i> ; wet; subangular to rounded gravel; medium-plasticity to nonplastic fines.	15.3					15
20.0		Dark gray, <i>Poorly Graded Sand (SP)</i> ; wet; medium to fine sand; nonplastic fines.	20.0		0.5		SUB2 (18'-19')	20
BOTTOM OF BORING BORING COMPLETED 6/14/2021								

Log: APW/MED Rev: AJ  
 Typ: WAP  
 GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

Estimated Water Level

Homer DOT&PF PFAS  
 Homer Airport  
 Homer, Alaska

## LOG OF GEOPROBE KD2

November 2021

106031-002

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**FIG. C-9**

# LOG OF GEOPROBE

Date Started	6/15/21	Location	Homer Airport	Ground Elevation:	Approx. NA feet
Date Completed	6/15/21			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	GeoTek Alaska	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description <small>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</small>	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number and Description.	Depth (ft)
1	1	Brown, <i>Organic Soil (OL)</i> ; moist; nonplastic to medium-plasticity fines.		-	0.9			5
5	2	Blue-gray, <i>Silt with Gravel (ML)</i> ; moist to 11.5 feet, then wet; subangular to rounded gravel; nonplastic to medium-plasticity fines.	6.0	-	0.4		SS	5
10	3			-	0.3	▽	SUB1 (6')	10
15		BOTTOM OF BORING BORING COMPLETED 6/15/2021	15.0	-		During Drilling	SUB2 (11.5')	15

Log: APW/MED Rev: AJ Typ: WAP  
GEOPROBE - AK 106031-002.GPJ 21-16604.GPJ 10/28/21

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.

LEGEND

▽ Estimated Water Level

Homer DOT&PF PFAS  
Homer Airport  
Homer, Alaska

## LOG OF GEOPROBE KD3

November 2021

106031-002

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Geotechnical and Environmental Consultants

**FIG. C-10**

## Appendix D

# Laboratory Reports and LDRCs

## CONTENTS

- Eurofins Analytical Report 320-75270-1 and LDRC
- Eurofins Analytical Report 320-75272-1 and LDRC
- Eurofins Analytical Report 320-75273-1 and LDRC
- SGS Laboratory Report of Analysis 1213521 and LDRC
- SGS Laboratory Report of Analysis 1213523 and LDRC

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-75270-1  
Client Project/Site: Homer Airport DOT

For:  
Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Ashley Jaramillo



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7/8/2021 9:20:56 AM

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Job ID: 320-75270-1

### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

##### Receipt

The samples were received on 6/22/2021 2:38 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.2° C.

##### Receipt Exceptions

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC):

Sample HOM18-SS (320-75270-16), container has time 1050 but COC has time 1155.

Sample KD2-SS (320-75270-20), container has time as 1710 but COC has time as 1700.

Sample HOM11-SUB1 (320-75270-28), container has time as 1250 but COC has time as 1243.

Samples were logged in and labeled according to time on COC.

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): Received two sets of bottles labeled as HOM11-SS, but no containers labeled as HOM11D-SS. After discussion with the client the two samples are field duplicates. One set of bottles assigned to each of the following samples HOM11-SS (320-75270-10) and HOM11D-SS (320-75270-23).

The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Sample 45 was received but not listed on COC. Container received one plastic 4 oz jar. ID: HOM14D-SS, date 6/15/21 and time 1735. HOM14D-SS (320-75270-45)

##### LCMS

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limit. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte.

Method EPA 537(Mod): The matrix spike duplicate (MSD) recoveries for Perfluorooctanesulfonic acid (PFOS) and Perfluorohexanesulfonic acid (PFHxS) for preparation batch 320-501777 and analytical batch 320-502189 were outside control limits. Non-homogeneity is suspected.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: KD3-SS (320-75270-21). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

Method EPA 537(Mod): The matrix spike duplicate (MSD) recoveries for DONA for preparation batch 320-501779 and analytical batch 320-502196 were outside control limits. Non-homogeneity is suspected.

Method EPA 537(Mod): Results for sample HOM5-SS (320-75270-5) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method EPA 537(Mod): The matrix spike duplicate (MSD) recoveries for preparation batch 320-502318 and analytical batch 320-503629 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: KD3-SUB1 (320-75270-41) and KD3-SUB2 (320-75270-42). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: HOM14-SUB1 (320-75270-43), HOM14-SUB2 (320-75270-44) and HOM14D-SS (320-75270-45). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

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

##### General Chemistry



# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

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## Job ID: 320-75270-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Sacramento (Continued)

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

#### Organic Prep

Method SHAKE: The following samples are light yellow after extraction/final volume: KD3-SS (320-75270-21), BL-SED (320-75270-24), LL-SED (320-75270-25) and KD1-SUB2 (320-75270-33).

Method SHAKE: The following sample was yellow after extraction/final volume: HOM14-SUB1 (320-75270-43)

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

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# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM1-SS

## Lab Sample ID: 320-75270-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.085	J	0.21	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.042	J	0.21	0.030	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.089	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.033	J	0.21	0.023	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.16	J	0.21	0.026	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.21	0.032	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.7		0.52	0.21	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM2-SS

## Lab Sample ID: 320-75270-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanoic acid (PFDA)	0.049	J	0.20	0.022	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM3-SS

## Lab Sample ID: 320-75270-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.33	J I	0.46	0.18	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM4-SS

## Lab Sample ID: 320-75270-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.078	J	0.24	0.050	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.42		0.24	0.043	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.28		0.24	0.037	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.9		0.60	0.24	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM5-SS

## Lab Sample ID: 320-75270-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.0		0.29	0.060	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.73		0.29	0.042	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.4		0.29	0.12	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.19	J	0.29	0.052	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.14	J	0.29	0.032	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.12	J	0.29	0.052	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.53		0.29	0.036	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	12		0.29	0.044	ug/Kg	1	☒	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	77		7.2	2.9	ug/Kg	10	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM6-SS

## Lab Sample ID: 320-75270-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroundecanoic acid (PFUnA)	0.14	J	0.40	0.072	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM7-SS

## Lab Sample ID: 320-75270-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.26	J I	0.47	0.19	ug/Kg	1	☒	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM9-SS

## Lab Sample ID: 320-75270-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM10-SS

Lab Sample ID: 320-75270-9

No Detections.

## Client Sample ID: HOM11-SS

Lab Sample ID: 320-75270-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.4		0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.31		0.21	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.38		0.21	0.091	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.17	J	0.21	0.026	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.21	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.7		0.53	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM12-SS

Lab Sample ID: 320-75270-11

No Detections.

## Client Sample ID: HOM13-SS

Lab Sample ID: 320-75270-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.088	J	0.21	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.24		0.21	0.090	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.19	J	0.21	0.038	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.31		0.21	0.023	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.54		0.21	0.038	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.057	J	0.21	0.054	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.051	J	0.21	0.026	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	F1	0.21	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8	I F1	0.53	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM14-SS

Lab Sample ID: 320-75270-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.075	J	0.27	0.041	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM15-SS

Lab Sample ID: 320-75270-14

No Detections.

## Client Sample ID: HOM16-SS

Lab Sample ID: 320-75270-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.042	J	0.20	0.031	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM18-SS

Lab Sample ID: 320-75270-16

No Detections.

## Client Sample ID: HOM19-SS

Lab Sample ID: 320-75270-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.079	J	0.22	0.046	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.15	J	0.22	0.094	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.040	J	0.22	0.039	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.076	J	0.22	0.024	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.21	J	0.22	0.034	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.5		0.55	0.22	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: FAA1-SS

## Lab Sample ID: 320-75270-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.058	J	0.24	0.050	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.052	J	0.24	0.037	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: KD1-SS

## Lab Sample ID: 320-75270-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.040	J I	0.25	0.039	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: KD2-SS

## Lab Sample ID: 320-75270-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.42	J	0.52	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: KD3-SS

## Lab Sample ID: 320-75270-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.10	J	0.58	0.089	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM7D-SS

## Lab Sample ID: 320-75270-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.33	J I	0.49	0.20	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM11D-SS

## Lab Sample ID: 320-75270-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.8		0.21	0.044	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.40		0.21	0.030	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.59		0.21	0.090	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.21	0.026	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0		0.21	0.032	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4		0.52	0.21	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: BL-SED

## Lab Sample ID: 320-75270-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.57	J	2.4	0.37	ug/Kg	1	✳	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.2	I	5.9	2.4	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: LL-SED

## Lab Sample ID: 320-75270-25

No Detections.

## Client Sample ID: KD2-SUB1

## Lab Sample ID: 320-75270-26

No Detections.

## Client Sample ID: KD2-SUB2

## Lab Sample ID: 320-75270-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.054	J	0.21	0.033	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM11-SUB1

## Lab Sample ID: 320-75270-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.6		0.22	0.047	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM11-SUB1 (Continued)

Lab Sample ID: 320-75270-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.94		0.22	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.57		0.22	0.097	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.22	0.028	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8		0.22	0.035	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.26	J	0.56	0.22	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM11-SUB2

Lab Sample ID: 320-75270-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.079	J	0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.056	J	0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM4-SUB1

Lab Sample ID: 320-75270-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.059	J	0.19	0.041	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.039	J	0.19	0.030	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM4-SUB2

Lab Sample ID: 320-75270-31

No Detections.

## Client Sample ID: KD1-SUB1

Lab Sample ID: 320-75270-32

No Detections.

## Client Sample ID: KD1-SUB2

Lab Sample ID: 320-75270-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.13	J	0.28	0.058	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.089	J	0.28	0.040	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.085	J	0.28	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.042	J	0.28	0.035	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.50		0.28	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9	I	0.69	0.28	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: FAA1-SUB1

Lab Sample ID: 320-75270-34

No Detections.

## Client Sample ID: FAA1-SUB2

Lab Sample ID: 320-75270-35

No Detections.

## Client Sample ID: HOM5-SUB1

Lab Sample ID: 320-75270-36

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.061	J	0.22	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

## Client Sample ID: HOM5-SUB2

Lab Sample ID: 320-75270-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.078	J	0.20	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.031	J	0.20	0.025	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM6-SUB1** **Lab Sample ID: 320-75270-38**

No Detections.

**Client Sample ID: HOM6D-SUB1** **Lab Sample ID: 320-75270-39**

No Detections.

**Client Sample ID: HOM6-SUB2** **Lab Sample ID: 320-75270-40**

No Detections.

**Client Sample ID: KD3-SUB1** **Lab Sample ID: 320-75270-41**

No Detections.

**Client Sample ID: KD3-SUB2** **Lab Sample ID: 320-75270-42**

No Detections.

**Client Sample ID: HOM14-SUB1** **Lab Sample ID: 320-75270-43**

No Detections.

**Client Sample ID: HOM14-SUB2** **Lab Sample ID: 320-75270-44**

No Detections.

**Client Sample ID: HOM14D-SS** **Lab Sample ID: 320-75270-45**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.042	J	0.25	0.039	ug/Kg	1	✳	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM1-SS**

**Lab Sample ID: 320-75270-1**

Date Collected: 06/17/21 09:45

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 94.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.085	J	0.21	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluoroheptanoic acid (PFHpA)	0.042	J	0.21	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.089	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorodecanoic acid (PFDA)	0.033	J	0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorobutanesulfonic acid (PFBS)	0.16	J	0.21	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.21	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Perfluorooctanesulfonic acid (PFOS)	7.7		0.52	0.21	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:20	06/27/21 03:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	75		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C4 PFHpA	79		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C4 PFOA	79		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C5 PFNA	73		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C2 PFDA	68		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C2 PFUnA	71		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C2 PFDoA	73		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C2 PFTeDA	73		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C3 PFBS	86		50 - 150	06/25/21 11:20	06/27/21 03:45	1
18O2 PFHxS	74		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C4 PFOS	63		50 - 150	06/25/21 11:20	06/27/21 03:45	1
d3-NMeFOSAA	71		50 - 150	06/25/21 11:20	06/27/21 03:45	1
d5-NEtFOSAA	77		50 - 150	06/25/21 11:20	06/27/21 03:45	1
13C3 HFPO-DA	81		50 - 150	06/25/21 11:20	06/27/21 03:45	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.6		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	94.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM2-SS**

**Lab Sample ID: 320-75270-2**

Date Collected: 06/17/21 11:19

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 89.0

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.049</b>	<b>J</b>	0.20	0.022	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	06/25/21 11:20	06/27/21 03:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C4 PFHpA	75		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C4 PFOA	83		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C5 PFNA	79		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C2 PFDA	74		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C2 PFUnA	68		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C2 PFDoA	72		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C2 PFTeDA	82		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C3 PFBS	85		50 - 150	06/25/21 11:20	06/27/21 03:54	1
18O2 PFHxS	74		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C4 PFOS	75		50 - 150	06/25/21 11:20	06/27/21 03:54	1
d3-NMeFOSAA	75		50 - 150	06/25/21 11:20	06/27/21 03:54	1
d5-NEtFOSAA	82		50 - 150	06/25/21 11:20	06/27/21 03:54	1
13C3 HFPO-DA	82		50 - 150	06/25/21 11:20	06/27/21 03:54	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.0		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	89.0		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM3-SS**

**Lab Sample ID: 320-75270-3**

Date Collected: 06/17/21 09:50

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 95.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.18	0.039	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.18	0.027	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorooctanoic acid (PFOA)	ND		0.18	0.079	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorononanoic acid (PFNA)	ND		0.18	0.033	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorodecanoic acid (PFDA)	ND		0.18	0.020	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.18	0.033	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.18	0.062	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.18	0.047	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.18	0.050	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.18	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.18	0.029	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.33</b>	<b>J I</b>	0.46	0.18	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	0.36	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.8	0.34	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.18	0.025	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.10	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.18	0.020	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.18	0.017	ug/Kg	☼	06/25/21 11:20	06/27/21 04:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C4 PFHpA	92		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C4 PFOA	83		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C5 PFNA	89		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C2 PFDA	71		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C2 PFUnA	81		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C2 PFDoA	80		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C2 PFTeDA	84		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C3 PFBS	83		50 - 150	06/25/21 11:20	06/27/21 04:04	1
18O2 PFHxS	84		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C4 PFOS	81		50 - 150	06/25/21 11:20	06/27/21 04:04	1
d3-NMeFOSAA	72		50 - 150	06/25/21 11:20	06/27/21 04:04	1
d5-NEtFOSAA	79		50 - 150	06/25/21 11:20	06/27/21 04:04	1
13C3 HFPO-DA	93		50 - 150	06/25/21 11:20	06/27/21 04:04	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>4.4</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>95.6</b>		0.1	0.1	%			06/24/21 15:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM4-SS**

**Lab Sample ID: 320-75270-4**

Date Collected: 06/14/21 18:45

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 80.2

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.078</b>	<b>J</b>	0.24	0.050	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.035	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.10	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.043	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.42</b>		0.24	0.043	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.080	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.061	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.065	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.28</b>		0.24	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>7.9</b>		0.60	0.24	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.4	0.47	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.4	0.44	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.30	0.13	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.022	ug/Kg	☼	06/25/21 11:20	06/27/21 04:13	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C4 PFHpA	92		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C4 PFOA	84		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C5 PFNA	88		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C2 PFDA	82		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C2 PFUnA	80		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C2 PFDoA	87		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C2 PFTeDA	87		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C3 PFBS	93		50 - 150	06/25/21 11:20	06/27/21 04:13	1
18O2 PFHxS	88		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C4 PFOS	76		50 - 150	06/25/21 11:20	06/27/21 04:13	1
d3-NMeFOSAA	84		50 - 150	06/25/21 11:20	06/27/21 04:13	1
d5-NEtFOSAA	79		50 - 150	06/25/21 11:20	06/27/21 04:13	1
13C3 HFPO-DA	97		50 - 150	06/25/21 11:20	06/27/21 04:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>19.8</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>80.2</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM5-SS**

**Lab Sample ID: 320-75270-5**

Date Collected: 06/15/21 13:25

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 63.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.0		0.29	0.060	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluoroheptanoic acid (PFHpA)	0.73		0.29	0.042	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorooctanoic acid (PFOA)	2.4		0.29	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorononanoic acid (PFNA)	0.19	J	0.29	0.052	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.29	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluoroundecanoic acid (PFUnA)	0.12	J	0.29	0.052	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorododecanoic acid (PFDoA)	ND		0.29	0.096	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorotridecanoic acid (PFTriA)	ND		0.29	0.073	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.29	0.077	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorobutanesulfonic acid (PFBS)	0.53		0.29	0.036	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Perfluorohexanesulfonic acid (PFHxS)	12		0.29	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.9	0.56	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.9	0.53	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.29	0.039	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.36	0.16	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.29	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.29	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 04:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C4 PFHpA	75		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C4 PFOA	73		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C5 PFNA	60		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C2 PFDA	72		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C2 PFUnA	74		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C2 PFDoA	74		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C2 PFTeDA	62		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C3 PFBS	82		50 - 150	06/25/21 11:20	06/27/21 04:22	1
18O2 PFHxS	77		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C4 PFOS	63		50 - 150	06/25/21 11:20	06/27/21 04:22	1
d3-NMeFOSAA	58		50 - 150	06/25/21 11:20	06/27/21 04:22	1
d5-NEtFOSAA	55		50 - 150	06/25/21 11:20	06/27/21 04:22	1
13C3 HFPO-DA	79		50 - 150	06/25/21 11:20	06/27/21 04:22	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	77		7.2	2.9	ug/Kg	☼	06/25/21 11:20	07/01/21 17:05	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	69		50 - 150	06/25/21 11:20	07/01/21 17:05	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	36.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM5-SS**

**Lab Sample ID: 320-75270-5**

**Date Collected: 06/15/21 13:25**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 63.6**

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	63.6		0.1	0.1	%			06/24/21 15:02	1

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# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM6-SS**

**Lab Sample ID: 320-75270-6**

Date Collected: 06/15/21 14:38

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 49.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.40	0.084	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluoroheptanoic acid (PFHpA)	ND		0.40	0.058	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorooctanoic acid (PFOA)	ND		0.40	0.17	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorononanoic acid (PFNA)	ND		0.40	0.072	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorodecanoic acid (PFDA)	ND		0.40	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.14</b>	<b>J</b>	0.40	0.072	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorododecanoic acid (PFDoA)	ND		0.40	0.13	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorotridecanoic acid (PFTriA)	ND		0.40	0.10	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.40	0.11	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.40	0.050	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.40	0.062	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.0	0.40	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.0	0.78	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.0	0.74	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.40	0.054	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.50	0.22	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.40	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.40	0.036	ug/Kg	☼	06/25/21 11:20	06/27/21 04:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C4 PFHpA	80		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C4 PFOA	77		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C5 PFNA	76		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C2 PFDA	69		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C2 PFUnA	77		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C2 PFDoA	68		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C2 PFTeDA	72		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C3 PFBS	74		50 - 150	06/25/21 11:20	06/27/21 04:31	1
18O2 PFHxS	76		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C4 PFOS	73		50 - 150	06/25/21 11:20	06/27/21 04:31	1
d3-NMeFOSAA	68		50 - 150	06/25/21 11:20	06/27/21 04:31	1
d5-NEtFOSAA	69		50 - 150	06/25/21 11:20	06/27/21 04:31	1
13C3 HFPO-DA	81		50 - 150	06/25/21 11:20	06/27/21 04:31	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	50.6		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	49.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM7-SS**

**Lab Sample ID: 320-75270-7**

**Date Collected: 06/17/21 09:58**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 93.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.040	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.027	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.081	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.034	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.034	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.063	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.048	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.051	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.26</b>	<b>J I</b>	0.47	0.19	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.37	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.35	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.10	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	✱	06/25/21 11:20	06/27/21 04:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C4 PFHpA	86		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C4 PFOA	75		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C5 PFNA	77		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C2 PFDA	73		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C2 PFUnA	68		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C2 PFDoA	80		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C2 PFTeDA	62		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C3 PFBS	87		50 - 150	06/25/21 11:20	06/27/21 04:40	1
18O2 PFHxS	73		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C4 PFOS	71		50 - 150	06/25/21 11:20	06/27/21 04:40	1
d3-NMeFOSAA	65		50 - 150	06/25/21 11:20	06/27/21 04:40	1
d5-NEtFOSAA	71		50 - 150	06/25/21 11:20	06/27/21 04:40	1
13C3 HFPO-DA	83		50 - 150	06/25/21 11:20	06/27/21 04:40	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>6.6</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>93.4</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM9-SS**

**Lab Sample ID: 320-75270-8**

Date Collected: 06/17/21 11:30

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 89.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.043	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.069	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.52	0.21	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:20	06/27/21 04:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	78		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C4 PFHpA	76		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C4 PFOA	82		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C5 PFNA	80		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C2 PFDA	65		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C2 PFUnA	70		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C2 PFDoA	81		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C2 PFTeDA	79		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C3 PFBS	90		50 - 150	06/25/21 11:20	06/27/21 04:49	1
18O2 PFHxS	75		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C4 PFOS	74		50 - 150	06/25/21 11:20	06/27/21 04:49	1
d3-NMeFOSAA	69		50 - 150	06/25/21 11:20	06/27/21 04:49	1
d5-NEtFOSAA	71		50 - 150	06/25/21 11:20	06/27/21 04:49	1
13C3 HFPO-DA	79		50 - 150	06/25/21 11:20	06/27/21 04:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.7		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	89.3		0.1	0.1	%			06/24/21 15:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM10-SS**

**Lab Sample ID: 320-75270-9**

Date Collected: 06/17/21 10:15

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 96.2

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.19	0.040	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.028	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.083	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.035	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.035	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.064	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.049	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.052	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.19	0.030	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.48	0.19	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.37	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.36	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.017	ug/Kg	✱	06/25/21 11:20	06/27/21 05:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C4 PFHpA	84		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C4 PFOA	80		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C5 PFNA	77		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C2 PFDA	72		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C2 PFUnA	80		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C2 PFDoA	83		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C2 PFTeDA	79		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C3 PFBS	80		50 - 150	06/25/21 11:20	06/27/21 05:17	1
18O2 PFHxS	67		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C4 PFOS	70		50 - 150	06/25/21 11:20	06/27/21 05:17	1
d3-NMeFOSAA	86		50 - 150	06/25/21 11:20	06/27/21 05:17	1
d5-NEtFOSAA	83		50 - 150	06/25/21 11:20	06/27/21 05:17	1
13C3 HFPO-DA	82		50 - 150	06/25/21 11:20	06/27/21 05:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.8		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	96.2		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM11-SS**

**Lab Sample ID: 320-75270-10**

Date Collected: 06/14/21 12:10

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 88.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.4		0.21	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluoroheptanoic acid (PFHpA)	0.31		0.21	0.031	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorooctanoic acid (PFOA)	0.38		0.21	0.091	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorobutanesulfonic acid (PFBS)	0.17	J	0.21	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorohexanesulfonic acid (PFHxS)	1.2		0.21	0.033	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Perfluorooctanesulfonic acid (PFOS)	3.7		0.53	0.21	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:20	06/27/21 05:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C4 PFHpA	80		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C4 PFOA	78		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C5 PFNA	76		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C2 PFDA	81		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C2 PFUnA	75		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C2 PFDoA	83		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C2 PFTeDA	77		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C3 PFBS	76		50 - 150	06/25/21 11:20	06/27/21 05:26	1
18O2 PFHxS	74		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C4 PFOS	71		50 - 150	06/25/21 11:20	06/27/21 05:26	1
d3-NMeFOSAA	74		50 - 150	06/25/21 11:20	06/27/21 05:26	1
d5-NEtFOSAA	73		50 - 150	06/25/21 11:20	06/27/21 05:26	1
13C3 HFPO-DA	81		50 - 150	06/25/21 11:20	06/27/21 05:26	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.7		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	88.3		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM12-SS**

**Lab Sample ID: 320-75270-11**

Date Collected: 06/17/21 11:37

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 84.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.095	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.074	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.060	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.55	0.22	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/25/21 11:20	06/27/21 05:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C4 PFHpA	84		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C4 PFOA	81		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C5 PFNA	83		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C2 PFDA	85		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C2 PFUnA	79		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C2 PFDoA	83		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C2 PFTeDA	83		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C3 PFBS	87		50 - 150	06/25/21 11:20	06/27/21 05:35	1
18O2 PFHxS	76		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C4 PFOS	71		50 - 150	06/25/21 11:20	06/27/21 05:35	1
d3-NMeFOSAA	73		50 - 150	06/25/21 11:20	06/27/21 05:35	1
d5-NEtFOSAA	74		50 - 150	06/25/21 11:20	06/27/21 05:35	1
13C3 HFPO-DA	87		50 - 150	06/25/21 11:20	06/27/21 05:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.4		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	84.6		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM13-SS**

**Lab Sample ID: 320-75270-12**

Date Collected: 06/17/21 10:23

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 89.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.044	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluoroheptanoic acid (PFHpA)	0.088	J	0.21	0.031	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorooctanoic acid (PFOA)	0.24		0.21	0.090	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorononanoic acid (PFNA)	0.19	J	0.21	0.038	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorodecanoic acid (PFDA)	0.31		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluoroundecanoic acid (PFUnA)	0.54		0.21	0.038	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorotridecanoic acid (PFTriA)	0.057	J	0.21	0.054	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorobutanesulfonic acid (PFBS)	0.051	J	0.21	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorohexanesulfonic acid (PFHxS)	1.4	F1	0.21	0.033	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Perfluorooctanesulfonic acid (PFOS)	3.8	IF1	0.53	0.21	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:20	06/27/21 05:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	79		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C4 PFHpA	75		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C4 PFOA	74		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C5 PFNA	74		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C2 PFDA	72		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C2 PFUnA	69		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C2 PFDoA	77		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C2 PFTeDA	70		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C3 PFBS	69		50 - 150	06/25/21 11:20	06/27/21 05:44	1
18O2 PFHxS	74		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C4 PFOS	67		50 - 150	06/25/21 11:20	06/27/21 05:44	1
d3-NMeFOSAA	65		50 - 150	06/25/21 11:20	06/27/21 05:44	1
d5-NEtFOSAA	70		50 - 150	06/25/21 11:20	06/27/21 05:44	1
13C3 HFPO-DA	79		50 - 150	06/25/21 11:20	06/27/21 05:44	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.2		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	89.8		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM14-SS**

**Lab Sample ID: 320-75270-13**

**Date Collected: 06/15/21 17:45**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 69.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.27	0.056	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.27	0.038	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorooctanoic acid (PFOA)	ND		0.27	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorononanoic acid (PFNA)	ND		0.27	0.048	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorodecanoic acid (PFDA)	ND		0.27	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.27	0.048	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.27	0.089	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.27	0.068	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.27	0.072	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.27	0.033	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.075</b>	<b>J</b>	0.27	0.041	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.66	0.27	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.7	0.52	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.7	0.49	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.27	0.036	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.33	0.15	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.27	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.27	0.024	ug/Kg	✱	06/25/21 11:20	06/27/21 06:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C4 PFHpA	90		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C4 PFOA	83		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C5 PFNA	87		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C2 PFDA	85		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C2 PFUnA	78		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C2 PFDoA	82		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C2 PFTeDA	85		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C3 PFBS	90		50 - 150	06/25/21 11:20	06/27/21 06:12	1
18O2 PFHxS	83		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C4 PFOS	80		50 - 150	06/25/21 11:20	06/27/21 06:12	1
d3-NMeFOSAA	75		50 - 150	06/25/21 11:20	06/27/21 06:12	1
d5-NEtFOSAA	84		50 - 150	06/25/21 11:20	06/27/21 06:12	1
13C3 HFPO-DA	92		50 - 150	06/25/21 11:20	06/27/21 06:12	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>30.4</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>69.6</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM15-SS**

**Lab Sample ID: 320-75270-14**

Date Collected: 06/17/21 11:45

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 82.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.047	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.096	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.025	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.075	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.061	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.035	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.56	0.22	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.44	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.025	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/25/21 11:20	06/27/21 06:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C4 PFHpA	86		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C4 PFOA	78		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C5 PFNA	83		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C2 PFDA	71		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C2 PFUnA	78		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C2 PFDoA	76		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C2 PFTeDA	75		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C3 PFBS	85		50 - 150	06/25/21 11:20	06/27/21 06:21	1
18O2 PFHxS	76		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C4 PFOS	74		50 - 150	06/25/21 11:20	06/27/21 06:21	1
d3-NMeFOSAA	67		50 - 150	06/25/21 11:20	06/27/21 06:21	1
d5-NEtFOSAA	74		50 - 150	06/25/21 11:20	06/27/21 06:21	1
13C3 HFPO-DA	85		50 - 150	06/25/21 11:20	06/27/21 06:21	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.2		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	82.8		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM16-SS**

**Lab Sample ID: 320-75270-15**

**Date Collected: 06/17/21 10:44**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 91.6**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.042</b>	<b>J</b>	0.20	0.031	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	06/25/21 11:20	06/27/21 06:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C4 PFHpA	87		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C4 PFOA	86		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C5 PFNA	83		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C2 PFDA	80		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C2 PFUnA	79		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C2 PFDoA	76		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C2 PFTeDA	86		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C3 PFBS	80		50 - 150	06/25/21 11:20	06/27/21 06:30	1
18O2 PFHxS	81		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C4 PFOS	78		50 - 150	06/25/21 11:20	06/27/21 06:30	1
d3-NMeFOSAA	69		50 - 150	06/25/21 11:20	06/27/21 06:30	1
d5-NEtFOSAA	80		50 - 150	06/25/21 11:20	06/27/21 06:30	1
13C3 HFPO-DA	85		50 - 150	06/25/21 11:20	06/27/21 06:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>8.4</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>91.6</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM18-SS**

**Lab Sample ID: 320-75270-16**

**Date Collected: 06/17/21 11:55**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 90.7**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.094	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.54	0.22	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.42	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.029	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	✱	06/25/21 11:20	06/27/21 06:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C4 PFHpA	88		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C4 PFOA	79		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C5 PFNA	79		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C2 PFDA	71		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C2 PFUnA	73		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C2 PFDoA	77		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C2 PFTeDA	69		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C3 PFBS	80		50 - 150	06/25/21 11:20	06/27/21 06:39	1
18O2 PFHxS	74		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C4 PFOS	69		50 - 150	06/25/21 11:20	06/27/21 06:39	1
d3-NMeFOSAA	72		50 - 150	06/25/21 11:20	06/27/21 06:39	1
d5-NEtFOSAA	75		50 - 150	06/25/21 11:20	06/27/21 06:39	1
13C3 HFPO-DA	83		50 - 150	06/25/21 11:20	06/27/21 06:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.3		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	90.7		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM19-SS**

**Lab Sample ID: 320-75270-17**

Date Collected: 06/17/21 13:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 81.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.079	J	0.22	0.046	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorooctanoic acid (PFOA)	0.15	J	0.22	0.094	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorononanoic acid (PFNA)	0.040	J	0.22	0.039	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorodecanoic acid (PFDA)	0.076	J	0.22	0.024	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.21	J	0.22	0.034	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Perfluorooctanesulfonic acid (PFOS)	4.5		0.55	0.22	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/25/21 11:20	06/27/21 07:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C4 PFHpA	86		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C4 PFOA	90		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C5 PFNA	84		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C2 PFDA	87		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C2 PFUnA	77		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C2 PFDoA	86		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C2 PFTeDA	78		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C3 PFBS	88		50 - 150	06/25/21 11:20	06/27/21 07:06	1
18O2 PFHxS	84		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C4 PFOS	76		50 - 150	06/25/21 11:20	06/27/21 07:06	1
d3-NMeFOSAA	74		50 - 150	06/25/21 11:20	06/27/21 07:06	1
d5-NEtFOSAA	88		50 - 150	06/25/21 11:20	06/27/21 07:06	1
13C3 HFPO-DA	89		50 - 150	06/25/21 11:20	06/27/21 07:06	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	81.8		0.1	0.1	%			06/24/21 15:02	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: FAA1-SS**

**Lab Sample ID: 320-75270-18**

**Date Collected: 06/15/21 11:50**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 81.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.058</b>	<b>J</b>	0.24	0.050	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.034	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.10	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.042	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.042	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.079	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.060	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.064	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.029	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.052</b>	<b>J</b>	0.24	0.037	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.59	0.24	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.4	0.46	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.4	0.44	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.032	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.026	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.021	ug/Kg	☼	06/25/21 11:20	06/27/21 07:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	73		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C4 PFHpA	74		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C4 PFOA	74		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C5 PFNA	73		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C2 PFDA	63		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C2 PFUnA	69		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C2 PFDoA	67		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C2 PFTeDA	66		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C3 PFBS	84		50 - 150	06/25/21 11:20	06/27/21 07:15	1
18O2 PFHxS	71		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C4 PFOS	71		50 - 150	06/25/21 11:20	06/27/21 07:15	1
d3-NMeFOSAA	59		50 - 150	06/25/21 11:20	06/27/21 07:15	1
d5-NEtFOSAA	67		50 - 150	06/25/21 11:20	06/27/21 07:15	1
13C3 HFPO-DA	71		50 - 150	06/25/21 11:20	06/27/21 07:15	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>18.7</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>81.3</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD1-SS**

**Lab Sample ID: 320-75270-19**

**Date Collected: 06/15/21 09:00**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 75.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.053	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.037	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.045	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.028	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.045	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.085	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.064	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.068	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.032	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.040</b>	<b>J I</b>	0.25	0.039	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.63	0.25	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.5	0.49	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.5	0.47	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.034	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.32	0.14	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.028	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.023	ug/Kg	✱	06/25/21 11:20	06/27/21 07:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C4 PFHpA	83		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C4 PFOA	77		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C5 PFNA	79		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C2 PFDA	73		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C2 PFUnA	71		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C2 PFDoA	76		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C2 PFTeDA	75		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C3 PFBS	82		50 - 150	06/25/21 11:20	06/27/21 07:25	1
18O2 PFHxS	73		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C4 PFOS	73		50 - 150	06/25/21 11:20	06/27/21 07:25	1
d3-NMeFOSAA	74		50 - 150	06/25/21 11:20	06/27/21 07:25	1
d5-NEtFOSAA	77		50 - 150	06/25/21 11:20	06/27/21 07:25	1
13C3 HFPO-DA	80		50 - 150	06/25/21 11:20	06/27/21 07:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>24.6</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>75.4</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD2-SS**

**Lab Sample ID: 320-75270-20**

**Date Collected: 06/14/21 17:00**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 87.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.043	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.030	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.089	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.069	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.026	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.032	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.42</b>	<b>J</b>	0.52	0.21	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.40	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.38	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	06/25/21 11:20	06/27/21 07:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C4 PFHpA	94		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C4 PFOA	85		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C5 PFNA	90		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C2 PFDA	84		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C2 PFUnA	80		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C2 PFDoA	86		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C2 PFTeDA	84		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C3 PFBS	84		50 - 150	06/25/21 11:20	06/27/21 07:34	1
18O2 PFHxS	91		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C4 PFOS	77		50 - 150	06/25/21 11:20	06/27/21 07:34	1
d3-NMeFOSAA	93		50 - 150	06/25/21 11:20	06/27/21 07:34	1
d5-NEtFOSAA	97		50 - 150	06/25/21 11:20	06/27/21 07:34	1
13C3 HFPO-DA	91		50 - 150	06/25/21 11:20	06/27/21 07:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>12.1</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>87.9</b>		0.1	0.1	%			06/24/21 15:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD3-SS**

**Lab Sample ID: 320-75270-21**

**Date Collected: 06/15/21 16:30**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 33.5**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.58	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluoroheptanoic acid (PFHpA)	ND		0.58	0.083	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorooctanoic acid (PFOA)	ND		0.58	0.25	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorononanoic acid (PFNA)	ND		0.58	0.10	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorodecanoic acid (PFDA)	ND		0.58	0.063	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluoroundecanoic acid (PFUnA)	ND		0.58	0.10	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorododecanoic acid (PFDoA)	ND		0.58	0.19	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorotridecanoic acid (PFTriA)	ND		0.58	0.15	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.58	0.16	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.58	0.072	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.10</b>	<b>J</b>	0.58	0.089	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.4	0.58	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.8	1.1	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.8	1.1	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.58	0.078	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.72	0.32	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.58	0.063	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.58	0.052	ug/Kg	✱	06/25/21 11:23	06/27/21 10:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	66		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C4 PFHpA	69		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C4 PFOA	63		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C5 PFNA	57		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C2 PFDA	58		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C2 PFUnA	49	*5-	50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C2 PFDoA	55		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C2 PFTeDA	55		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C3 PFBS	81		50 - 150	06/25/21 11:23	06/27/21 10:30	1
18O2 PFHxS	72		50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C4 PFOS	70		50 - 150	06/25/21 11:23	06/27/21 10:30	1
d3-NMeFOSAA	47	*5-	50 - 150	06/25/21 11:23	06/27/21 10:30	1
d5-NEtFOSAA	39	*5-	50 - 150	06/25/21 11:23	06/27/21 10:30	1
13C3 HFPO-DA	77		50 - 150	06/25/21 11:23	06/27/21 10:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>66.5</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>33.5</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM7D-SS**

**Lab Sample ID: 320-75270-22**

**Date Collected: 06/17/21 09:58**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 94.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.041	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.028	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.084	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.035	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.035	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.066	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.050	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.053	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.030	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.33</b>	<b>J I</b>	0.49	0.20	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.38	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.36	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.026	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	✱	06/25/21 11:23	06/27/21 10:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C4 PFHpA	108		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C4 PFOA	100		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C5 PFNA	89		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C2 PFDA	88		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C2 PFUnA	90		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C2 PFDoA	93		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C2 PFTeDA	94		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C3 PFBS	111		50 - 150	06/25/21 11:23	06/27/21 10:39	1
18O2 PFHxS	108		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C4 PFOS	93		50 - 150	06/25/21 11:23	06/27/21 10:39	1
d3-NMeFOSAA	74		50 - 150	06/25/21 11:23	06/27/21 10:39	1
d5-NEtFOSAA	88		50 - 150	06/25/21 11:23	06/27/21 10:39	1
13C3 HFPO-DA	105		50 - 150	06/25/21 11:23	06/27/21 10:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>5.7</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>94.3</b>		0.1	0.1	%			06/24/21 15:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM11D-SS**

**Lab Sample ID: 320-75270-23**

Date Collected: 06/14/21 12:10

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 86.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.8		0.21	0.044	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluoroheptanoic acid (PFHpA)	0.40		0.21	0.030	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorooctanoic acid (PFOA)	0.59		0.21	0.090	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.037	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.070	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.053	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.056	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.21	0.026	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorohexanesulfonic acid (PFHxS)	2.0		0.21	0.032	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Perfluorooctanesulfonic acid (PFOS)	1.4		0.52	0.21	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.028	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.26	0.11	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:23	06/27/21 10:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C4 PFHpA	103		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C4 PFOA	91		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C5 PFNA	93		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C2 PFDA	89		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C2 PFUnA	81		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C2 PFDoA	89		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C2 PFTeDA	82		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C3 PFBS	87		50 - 150	06/25/21 11:23	06/27/21 10:48	1
18O2 PFHxS	87		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C4 PFOS	90		50 - 150	06/25/21 11:23	06/27/21 10:48	1
d3-NMeFOSAA	87		50 - 150	06/25/21 11:23	06/27/21 10:48	1
d5-NEtFOSAA	93		50 - 150	06/25/21 11:23	06/27/21 10:48	1
13C3 HFPO-DA	97		50 - 150	06/25/21 11:23	06/27/21 10:48	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.6		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	86.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: BL-SED**

**Lab Sample ID: 320-75270-24**

**Date Collected: 06/17/21 13:35**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 7.4**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.4	0.50	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluoroheptanoic acid (PFHpA)	ND		2.4	0.34	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorooctanoic acid (PFOA)	ND		2.4	1.0	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorononanoic acid (PFNA)	ND		2.4	0.43	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorodecanoic acid (PFDA)	ND		2.4	0.26	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluoroundecanoic acid (PFUnA)	ND		2.4	0.43	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorododecanoic acid (PFDoA)	ND		2.4	0.80	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorotridecanoic acid (PFTriA)	ND		2.4	0.61	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.4	0.64	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.4	0.30	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.57</b>	<b>J</b>	2.4	0.37	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>6.2</b>	<b>I</b>	5.9	2.4	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		24	4.6	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		24	4.4	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.4	0.32	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.0	1.3	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.4	0.26	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.4	0.21	ug/Kg	☼	06/25/21 11:23	06/27/21 10:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	77		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C4 PFHpA	82		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C4 PFOA	78		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C5 PFNA	74		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C2 PFDA	76		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C2 PFUnA	72		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C2 PFDoA	70		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C2 PFTeDA	77		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C3 PFBS	85		50 - 150	06/25/21 11:23	06/27/21 10:57	1
18O2 PFHxS	82		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C4 PFOS	70		50 - 150	06/25/21 11:23	06/27/21 10:57	1
d3-NMeFOSAA	72		50 - 150	06/25/21 11:23	06/27/21 10:57	1
d5-NEtFOSAA	64		50 - 150	06/25/21 11:23	06/27/21 10:57	1
13C3 HFPO-DA	88		50 - 150	06/25/21 11:23	06/27/21 10:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>92.6</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>7.4</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: LL-SED**

**Lab Sample ID: 320-75270-25**

**Date Collected: 06/17/21 12:20**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 33.3**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.53	0.11	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.53	0.077	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorooctanoic acid (PFOA)	ND		0.53	0.23	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorononanoic acid (PFNA)	ND		0.53	0.095	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorodecanoic acid (PFDA)	ND		0.53	0.058	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.53	0.095	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.53	0.18	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.53	0.13	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.53	0.14	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.53	0.066	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.53	0.082	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.3	0.53	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.3	1.0	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.3	0.98	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.53	0.071	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.66	0.29	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.53	0.058	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.53	0.048	ug/Kg	✱	06/25/21 11:23	06/27/21 11:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C4 PFHpA	109		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C4 PFOA	102		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C5 PFNA	95		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C2 PFDA	92		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C2 PFUnA	103		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C2 PFDoA	97		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C2 PFTeDA	96		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C3 PFBS	103		50 - 150	06/25/21 11:23	06/27/21 11:07	1
18O2 PFHxS	109		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C4 PFOS	97		50 - 150	06/25/21 11:23	06/27/21 11:07	1
d3-NMeFOSAA	88		50 - 150	06/25/21 11:23	06/27/21 11:07	1
d5-NEtFOSAA	87		50 - 150	06/25/21 11:23	06/27/21 11:07	1
13C3 HFPO-DA	114		50 - 150	06/25/21 11:23	06/27/21 11:07	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	66.7		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	33.3		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD2-SUB1**

**Lab Sample ID: 320-75270-26**

Date Collected: 06/14/21 17:25

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 87.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.092	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.033	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.53	0.21	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.42	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	06/25/21 11:23	06/27/21 11:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	88		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C4 PFHpA	98		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C4 PFOA	91		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C5 PFNA	88		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C2 PFDA	91		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C2 PFUnA	85		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C2 PFDoA	90		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C2 PFTeDA	83		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C3 PFBS	98		50 - 150	06/25/21 11:23	06/27/21 11:16	1
18O2 PFHxS	85		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C4 PFOS	76		50 - 150	06/25/21 11:23	06/27/21 11:16	1
d3-NMeFOSAA	86		50 - 150	06/25/21 11:23	06/27/21 11:16	1
d5-NEtFOSAA	83		50 - 150	06/25/21 11:23	06/27/21 11:16	1
13C3 HFPO-DA	97		50 - 150	06/25/21 11:23	06/27/21 11:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.5		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	87.5		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD2-SUB2**

**Lab Sample ID: 320-75270-27**

Date Collected: 06/14/21 17:49

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 88.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.092	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.072	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.055	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.058	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.054</b>	<b>J</b>	0.21	0.033	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.54	0.21	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.42	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.40	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	06/25/21 11:23	06/27/21 11:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C4 PFHpA	115		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C4 PFOA	102		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C5 PFNA	108		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C2 PFDA	94		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C2 PFUnA	95		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C2 PFDoA	99		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C2 PFTeDA	93		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C3 PFBS	103		50 - 150	06/25/21 11:23	06/27/21 11:25	1
18O2 PFHxS	92		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C4 PFOS	90		50 - 150	06/25/21 11:23	06/27/21 11:25	1
d3-NMeFOSAA	88		50 - 150	06/25/21 11:23	06/27/21 11:25	1
d5-NEtFOSAA	100		50 - 150	06/25/21 11:23	06/27/21 11:25	1
13C3 HFPO-DA	111		50 - 150	06/25/21 11:23	06/27/21 11:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>11.7</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>88.3</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM11-SUB1**

**Lab Sample ID: 320-75270-28**

Date Collected: 06/14/21 12:43

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 86.1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.6		0.22	0.047	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluoroheptanoic acid (PFHpA)	0.94		0.22	0.033	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorooctanoic acid (PFOA)	0.57		0.22	0.097	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.075	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.061	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.22	0.028	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorohexanesulfonic acid (PFHxS)	1.8		0.22	0.035	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Perfluorooctanesulfonic acid (PFOS)	0.26	J	0.56	0.22	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.44	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.42	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/25/21 11:23	06/27/21 11:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C4 PFHpA	107		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C4 PFOA	100		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C5 PFNA	96		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C2 PFDA	93		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C2 PFUnA	82		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C2 PFDoA	100		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C2 PFTeDA	81		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C3 PFBS	93		50 - 150	06/25/21 11:23	06/27/21 11:34	1
18O2 PFHxS	91		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C4 PFOS	86		50 - 150	06/25/21 11:23	06/27/21 11:34	1
d3-NMeFOSAA	89		50 - 150	06/25/21 11:23	06/27/21 11:34	1
d5-NEtFOSAA	90		50 - 150	06/25/21 11:23	06/27/21 11:34	1
13C3 HFPO-DA	109		50 - 150	06/25/21 11:23	06/27/21 11:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.9		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	86.1		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM11-SUB2**

**Lab Sample ID: 320-75270-29**

**Date Collected: 06/14/21 16:04**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 92.2**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.079</b>	<b>J</b>	0.21	0.045	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.091	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.071	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.057	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.056</b>	<b>J</b>	0.21	0.033	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.53	0.21	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.41	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.39	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	☼	06/25/21 11:23	06/27/21 12:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C4 PFHpA	106		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C4 PFOA	96		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C5 PFNA	100		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C2 PFDA	89		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C2 PFUnA	93		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C2 PFDoA	99		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C2 PFTeDA	87		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C3 PFBS	100		50 - 150	06/25/21 11:23	06/27/21 12:01	1
18O2 PFHxS	92		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C4 PFOS	78		50 - 150	06/25/21 11:23	06/27/21 12:01	1
d3-NMeFOSAA	87		50 - 150	06/25/21 11:23	06/27/21 12:01	1
d5-NEtFOSAA	92		50 - 150	06/25/21 11:23	06/27/21 12:01	1
13C3 HFPO-DA	109		50 - 150	06/25/21 11:23	06/27/21 12:01	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>7.8</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>92.2</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM4-SUB1**

**Lab Sample ID: 320-75270-30**

Date Collected: 06/14/21 19:02

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 91.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.059</b>	<b>J</b>	0.19	0.041	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluoroheptanoic acid (PFHpA)	ND		0.19	0.028	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorooctanoic acid (PFOA)	ND		0.19	0.084	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorononanoic acid (PFNA)	ND		0.19	0.035	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorodecanoic acid (PFDA)	ND		0.19	0.021	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluoroundecanoic acid (PFUnA)	ND		0.19	0.035	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorododecanoic acid (PFDoA)	ND		0.19	0.065	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorotridecanoic acid (PFTriA)	ND		0.19	0.050	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.19	0.053	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.19	0.024	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.039</b>	<b>J</b>	0.19	0.030	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.49	0.19	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.38	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.36	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.19	0.026	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.11	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.19	0.021	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.19	0.018	ug/Kg	☼	06/25/21 11:23	06/27/21 12:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C4 PFHpA	102		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C4 PFOA	87		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C5 PFNA	91		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C2 PFDA	83		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C2 PFUnA	83		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C2 PFDoA	90		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C2 PFTeDA	76		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C3 PFBS	99		50 - 150	06/25/21 11:23	06/27/21 12:10	1
18O2 PFHxS	83		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C4 PFOS	83		50 - 150	06/25/21 11:23	06/27/21 12:10	1
d3-NMeFOSAA	79		50 - 150	06/25/21 11:23	06/27/21 12:10	1
d5-NEtFOSAA	90		50 - 150	06/25/21 11:23	06/27/21 12:10	1
13C3 HFPO-DA	98		50 - 150	06/25/21 11:23	06/27/21 12:10	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>8.2</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>91.8</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM4-SUB2**

**Lab Sample ID: 320-75270-31**

Date Collected: 06/14/21 19:24

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 93.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.087	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	06/25/21 11:23	06/27/21 12:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C4 PFHpA	96		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C4 PFOA	89		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C5 PFNA	92		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C2 PFDA	84		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C2 PFUnA	86		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C2 PFDoA	84		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C2 PFTeDA	70		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C3 PFBS	94		50 - 150	06/25/21 11:23	06/27/21 12:20	1
18O2 PFHxS	84		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C4 PFOS	74		50 - 150	06/25/21 11:23	06/27/21 12:20	1
d3-NMeFOSAA	86		50 - 150	06/25/21 11:23	06/27/21 12:20	1
d5-NEtFOSAA	85		50 - 150	06/25/21 11:23	06/27/21 12:20	1
13C3 HFPO-DA	94		50 - 150	06/25/21 11:23	06/27/21 12:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.4		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	93.6		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD1-SUB1**

**Lab Sample ID: 320-75270-32**

Date Collected: 06/15/21 09:42

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 91.1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.092	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.038	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.038	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.072	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.054	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.058	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.033	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.53	0.21	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.42	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.40	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.023	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	06/25/21 11:23	06/27/21 12:29	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	94		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C4 PFHpA	110		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C4 PFOA	93		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C5 PFNA	103		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C2 PFDA	90		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C2 PFUnA	96		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C2 PFDoA	101		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C2 PFTeDA	86		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C3 PFBS	107		50 - 150	06/25/21 11:23	06/27/21 12:29	1
18O2 PFHxS	92		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C4 PFOS	81		50 - 150	06/25/21 11:23	06/27/21 12:29	1
d3-NMeFOSAA	81		50 - 150	06/25/21 11:23	06/27/21 12:29	1
d5-NEtFOSAA	98		50 - 150	06/25/21 11:23	06/27/21 12:29	1
13C3 HFPO-DA	109		50 - 150	06/25/21 11:23	06/27/21 12:29	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.9		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	91.1		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD1-SUB2**

**Lab Sample ID: 320-75270-33**

Date Collected: 06/15/21 11:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 70.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.13	J	0.28	0.058	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluoroheptanoic acid (PFHpA)	0.089	J	0.28	0.040	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorooctanoic acid (PFOA)	ND		0.28	0.12	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorononanoic acid (PFNA)	0.085	J	0.28	0.050	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorodecanoic acid (PFDA)	ND		0.28	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.28	0.050	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.28	0.093	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.28	0.071	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.28	0.075	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorobutanesulfonic acid (PFBS)	0.042	J	0.28	0.035	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorohexanesulfonic acid (PFHxS)	0.50		0.28	0.043	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Perfluorooctanesulfonic acid (PFOS)	2.9	I	0.69	0.28	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.8	0.54	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.8	0.51	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.28	0.038	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.35	0.15	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.28	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.28	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 12:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	105		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C4 PFHpA	102		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C4 PFOA	92		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C5 PFNA	81		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C2 PFDA	84		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C2 PFUnA	78		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C2 PFDoA	84		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C2 PFTeDA	73		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C3 PFBS	122		50 - 150	06/25/21 11:23	06/27/21 12:38	1
18O2 PFHxS	108		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C4 PFOS	93		50 - 150	06/25/21 11:23	06/27/21 12:38	1
d3-NMeFOSAA	64		50 - 150	06/25/21 11:23	06/27/21 12:38	1
d5-NEtFOSAA	59		50 - 150	06/25/21 11:23	06/27/21 12:38	1
13C3 HFPO-DA	124		50 - 150	06/25/21 11:23	06/27/21 12:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.6		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	70.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: FAA1-SUB1**

**Lab Sample ID: 320-75270-34**

Date Collected: 06/15/21 12:09

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 83.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.21	0.045	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.031	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.092	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.072	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.055	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.058	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.027	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.033	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.54	0.21	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.1	0.42	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.1	0.40	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.029	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.019	ug/Kg	✱	06/25/21 11:23	06/27/21 12:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	85		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C4 PFHpA	105		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C4 PFOA	92		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C5 PFNA	89		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C2 PFDA	83		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C2 PFUnA	80		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C2 PFDoA	99		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C2 PFTeDA	88		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C3 PFBS	98		50 - 150	06/25/21 11:23	06/27/21 12:47	1
18O2 PFHxS	92		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C4 PFOS	86		50 - 150	06/25/21 11:23	06/27/21 12:47	1
d3-NMeFOSAA	83		50 - 150	06/25/21 11:23	06/27/21 12:47	1
d5-NEtFOSAA	86		50 - 150	06/25/21 11:23	06/27/21 12:47	1
13C3 HFPO-DA	94		50 - 150	06/25/21 11:23	06/27/21 12:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.5		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	83.5		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: FAA1-SUB2**

**Lab Sample ID: 320-75270-35**

Date Collected: 06/15/21 12:38

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 88.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.094	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.55	0.22	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	✱	06/25/21 11:23	06/27/21 12:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C4 PFHpA	98		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C4 PFOA	89		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C5 PFNA	96		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C2 PFDA	83		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C2 PFUnA	93		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C2 PFDoA	94		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C2 PFTeDA	92		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C3 PFBS	94		50 - 150	06/25/21 11:23	06/27/21 12:56	1
18O2 PFHxS	93		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C4 PFOS	83		50 - 150	06/25/21 11:23	06/27/21 12:56	1
d3-NMeFOSAA	77		50 - 150	06/25/21 11:23	06/27/21 12:56	1
d5-NEtFOSAA	92		50 - 150	06/25/21 11:23	06/27/21 12:56	1
13C3 HFPO-DA	104		50 - 150	06/25/21 11:23	06/27/21 12:56	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.6		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	88.4		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM5-SUB1**

**Lab Sample ID: 320-75270-36**

Date Collected: 06/15/21 13:45

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 86.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.061	J	0.22	0.046	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.093	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.055	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.54	0.22	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.42	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.029	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/25/21 11:23	06/27/21 13:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C4 PFHpA	116		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C4 PFOA	98		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C5 PFNA	102		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C2 PFDA	101		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C2 PFUnA	94		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C2 PFDoA	100		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C2 PFTeDA	95		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C3 PFBS	112		50 - 150	06/25/21 11:23	06/27/21 13:05	1
18O2 PFHxS	93		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C4 PFOS	91		50 - 150	06/25/21 11:23	06/27/21 13:05	1
d3-NMeFOSAA	87		50 - 150	06/25/21 11:23	06/27/21 13:05	1
d5-NEtFOSAA	97		50 - 150	06/25/21 11:23	06/27/21 13:05	1
13C3 HFPO-DA	111		50 - 150	06/25/21 11:23	06/27/21 13:05	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.4		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	86.6		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM5-SUB2**

**Lab Sample ID: 320-75270-37**

**Date Collected: 06/15/21 13:50**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 90.9**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.078</b>	<b>J</b>	0.20	0.043	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.087	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.037	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.037	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.031</b>	<b>J</b>	0.20	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.51	0.20	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.40	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.38	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	06/25/21 11:23	06/27/21 13:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	108		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C4 PFHpA	124		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C4 PFOA	107		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C5 PFNA	114		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C2 PFDA	115		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C2 PFUnA	101		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C2 PFDoA	98		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C2 PFTeDA	99		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C3 PFBS	115		50 - 150	06/25/21 11:23	06/27/21 13:14	1
18O2 PFHxS	109		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C4 PFOS	104		50 - 150	06/25/21 11:23	06/27/21 13:14	1
d3-NMeFOSAA	104		50 - 150	06/25/21 11:23	06/27/21 13:14	1
d5-NEtFOSAA	99		50 - 150	06/25/21 11:23	06/27/21 13:14	1
13C3 HFPO-DA	118		50 - 150	06/25/21 11:23	06/27/21 13:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>9.1</b>		0.1	0.1	%			06/24/21 15:02	1
<b>Percent Solids</b>	<b>90.9</b>		0.1	0.1	%			06/24/21 15:02	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM6-SUB1**

**Lab Sample ID: 320-75270-38**

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 88.2

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.047	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.096	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.025	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.075	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.060	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.035	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.56	0.22	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.025	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	✱	06/25/21 11:23	06/27/21 13:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	101		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C4 PFHpA	107		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C4 PFOA	100		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C5 PFNA	101		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C2 PFDA	103		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C2 PFUnA	100		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C2 PFDoA	97		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C2 PFTeDA	84		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C3 PFBS	93		50 - 150	06/25/21 11:23	06/27/21 13:24	1
18O2 PFHxS	82		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C4 PFOS	80		50 - 150	06/25/21 11:23	06/27/21 13:24	1
d3-NMeFOSAA	91		50 - 150	06/25/21 11:23	06/27/21 13:24	1
d5-NEtFOSAA	90		50 - 150	06/25/21 11:23	06/27/21 13:24	1
13C3 HFPO-DA	107		50 - 150	06/25/21 11:23	06/27/21 13:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11.8		0.1	0.1	%			06/24/21 15:02	1
Percent Solids	88.2		0.1	0.1	%			06/24/21 15:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM6D-SUB1**

**Lab Sample ID: 320-75270-39**

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 84.4

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.23	0.048	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.033	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.099	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.041	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.025	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.041	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.077	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.059	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.062	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.029	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.036	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.58	0.23	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.3	0.45	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.3	0.43	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.031	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.29	0.13	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.025	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.021	ug/Kg	✱	06/25/21 11:23	06/27/21 13:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C4 PFHpA	92		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C4 PFOA	98		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C5 PFNA	82		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C2 PFDA	86		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C2 PFUnA	87		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C2 PFDoA	91		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C2 PFTeDA	89		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C3 PFBS	84		50 - 150	06/25/21 11:23	06/27/21 13:51	1
18O2 PFHxS	75		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C4 PFOS	66		50 - 150	06/25/21 11:23	06/27/21 13:51	1
d3-NMeFOSAA	80		50 - 150	06/25/21 11:23	06/27/21 13:51	1
d5-NEtFOSAA	84		50 - 150	06/25/21 11:23	06/27/21 13:51	1
13C3 HFPO-DA	98		50 - 150	06/25/21 11:23	06/27/21 13:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.6		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	84.4		0.1	0.1	%			06/24/21 15:12	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM6-SUB2**

**Lab Sample ID: 320-75270-40**

Date Collected: 06/15/21 15:10

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 87.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.087	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.052	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	0.20	0.018	ug/Kg	☼	06/25/21 11:23	06/27/21 14:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C4 PFHpA	113		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C4 PFOA	93		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C5 PFNA	97		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C2 PFDA	100		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C2 PFUnA	96		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C2 PFDoA	96		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C2 PFTeDA	89		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C3 PFBS	102		50 - 150	06/25/21 11:23	06/27/21 14:00	1
18O2 PFHxS	89		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C4 PFOS	85		50 - 150	06/25/21 11:23	06/27/21 14:00	1
d3-NMeFOSAA	87		50 - 150	06/25/21 11:23	06/27/21 14:00	1
d5-NEtFOSAA	89		50 - 150	06/25/21 11:23	06/27/21 14:00	1
13C3 HFPO-DA	108		50 - 150	06/25/21 11:23	06/27/21 14:00	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.7		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	87.3		0.1	0.1	%			06/24/21 15:12	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD3-SUB1**

**Lab Sample ID: 320-75270-41**

Date Collected: 06/15/21 16:40

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 85.1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.046	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.032	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.094	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.039	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.024	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.039	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.073	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.056	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.059	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.027	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.034	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.55	0.22	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.43	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.40	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.029	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.27	0.12	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.024	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/27/21 18:38	07/01/21 20:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C4 PFHpA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C4 PFOA	48	*5-	50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C5 PFNA	51		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C2 PFDA	53		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C2 PFUnA	53		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C2 PFDoA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C2 PFTeDA	53		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C3 PFBS	56		50 - 150	06/27/21 18:38	07/01/21 20:23	1
18O2 PFHxS	51		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C4 PFOS	48	*5-	50 - 150	06/27/21 18:38	07/01/21 20:23	1
d3-NMeFOSAA	56		50 - 150	06/27/21 18:38	07/01/21 20:23	1
d5-NEtFOSAA	58		50 - 150	06/27/21 18:38	07/01/21 20:23	1
13C3 HFPO-DA	51		50 - 150	06/27/21 18:38	07/01/21 20:23	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.9		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	85.1		0.1	0.1	%			06/24/21 15:12	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD3-SUB2**

**Lab Sample ID: 320-75270-42**

Date Collected: 06/15/21 16:50

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 85.3

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.22	0.047	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.033	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.096	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.040	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.025	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.040	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.075	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.057	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.061	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.028	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.035	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.56	0.22	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.2	0.44	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.2	0.41	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.030	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.28	0.12	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.025	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.020	ug/Kg	☼	06/27/21 18:38	07/01/21 20:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C4 PFHpA	50		50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C4 PFOA	48	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C5 PFNA	46	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C2 PFDA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C2 PFUnA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C2 PFDoA	46	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C2 PFTeDA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C3 PFBS	54		50 - 150	06/27/21 18:38	07/01/21 20:32	1
18O2 PFHxS	51		50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C4 PFOS	46	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
d3-NMeFOSAA	42	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1
d5-NEtFOSAA	55		50 - 150	06/27/21 18:38	07/01/21 20:32	1
13C3 HFPO-DA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 20:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.7		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	85.3		0.1	0.1	%			06/24/21 15:12	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM14-SUB1**

**Lab Sample ID: 320-75270-43**

Date Collected: 06/15/21 18:05

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 37.6

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.53	0.11	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.53	0.077	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorooctanoic acid (PFOA)	ND		0.53	0.23	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorononanoic acid (PFNA)	ND		0.53	0.095	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorodecanoic acid (PFDA)	ND		0.53	0.058	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.53	0.095	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.53	0.18	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.53	0.14	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.53	0.14	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.53	0.066	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.53	0.082	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.3	0.53	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.3	1.0	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.3	0.98	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.53	0.072	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.66	0.29	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.53	0.058	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.53	0.048	ug/Kg	☼	06/27/21 18:38	07/01/21 04:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	71		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C4 PFHpA	66		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C4 PFOA	63		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C5 PFNA	52		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C2 PFDA	64		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C2 PFUnA	53		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C2 PFDoA	45	*5-	50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C2 PFTeDA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C3 PFBS	81		50 - 150	06/27/21 18:38	07/01/21 04:34	1
18O2 PFHxS	69		50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C4 PFOS	53		50 - 150	06/27/21 18:38	07/01/21 04:34	1
d3-NMeFOSAA	55		50 - 150	06/27/21 18:38	07/01/21 04:34	1
d5-NEtFOSAA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:34	1
13C3 HFPO-DA	72		50 - 150	06/27/21 18:38	07/01/21 04:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	62.4		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	37.6		0.1	0.1	%			06/24/21 15:12	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM14-SUB2**

**Lab Sample ID: 320-75270-44**

Date Collected: 06/15/21 18:25

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 93.5

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.087	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.068	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.055	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg	☼	06/27/21 18:38	07/01/21 04:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	51		50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C4 PFHpA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C4 PFOA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C5 PFNA	45	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C2 PFDA	52		50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C2 PFUnA	48	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C2 PFDoA	51		50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C2 PFTeDA	53		50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C3 PFBS	53		50 - 150	06/27/21 18:38	07/01/21 04:43	1
18O2 PFHxS	49	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C4 PFOS	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
d3-NMeFOSAA	39	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1
d5-NEtFOSAA	55		50 - 150	06/27/21 18:38	07/01/21 04:43	1
13C3 HFPO-DA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:43	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.1	0.1	%			06/24/21 15:12	1
Percent Solids	93.5		0.1	0.1	%			06/24/21 15:12	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM14D-SS**

**Lab Sample ID: 320-75270-45**

Date Collected: 06/15/21 17:35

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 72.8

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.25	0.053	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.037	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.11	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorononanoic acid (PFNA)	ND		0.25	0.046	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorodecanoic acid (PFDA)	ND		0.25	0.028	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.046	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorododecanoic acid (PFDoA)	ND		0.25	0.085	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.065	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.068	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.032	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.042</b>	<b>J</b>	0.25	0.039	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.63	0.25	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.5	0.49	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.5	0.47	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.034	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.32	0.14	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.028	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.023	ug/Kg	✱	06/27/21 18:38	07/01/21 04:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	63		50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C4 PFHpA	52		50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C4 PFOA	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C5 PFNA	40	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C2 PFDA	49	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C2 PFUnA	50		50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C2 PFDoA	42	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C2 PFTeDA	54		50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C3 PFBS	70		50 - 150	06/27/21 18:38	07/01/21 04:53	1
18O2 PFHxS	58		50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C4 PFOS	47	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
d3-NMeFOSAA	42	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
d5-NEtFOSAA	45	*5-	50 - 150	06/27/21 18:38	07/01/21 04:53	1
13C3 HFPO-DA	54		50 - 150	06/27/21 18:38	07/01/21 04:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>27.2</b>		0.1	0.1	%			06/24/21 15:12	1
<b>Percent Solids</b>	<b>72.8</b>		0.1	0.1	%			06/24/21 15:12	1

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (50-150)
320-75270-1	HOM1-SS	75	79	79	73	68	71	73	73
320-75270-2	HOM2-SS	82	75	83	79	74	68	72	82
320-75270-3	HOM3-SS	86	92	83	89	71	81	80	84
320-75270-4	HOM4-SS	95	92	84	88	82	80	87	87
320-75270-5	HOM5-SS	77	75	73	60	72	74	74	62
320-75270-5 - DL	HOM5-SS								
320-75270-6	HOM6-SS	78	80	77	76	69	77	68	72
320-75270-7	HOM7-SS	82	86	75	77	73	68	80	62
320-75270-8	HOM9-SS	78	76	82	80	65	70	81	79
320-75270-9	HOM10-SS	80	84	80	77	72	80	83	79
320-75270-10	HOM11-SS	81	80	78	76	81	75	83	77
320-75270-11	HOM12-SS	74	84	81	83	85	79	83	83
320-75270-12	HOM13-SS	79	75	74	74	72	69	77	70
320-75270-12 MS	HOM13-SS	84	89	79	87	73	74	82	75
320-75270-12 MSD	HOM13-SS	84	83	84	82	71	79	87	74
320-75270-13	HOM14-SS	77	90	83	87	85	78	82	85
320-75270-14	HOM15-SS	74	86	78	83	71	78	76	75
320-75270-15	HOM16-SS	81	87	86	83	80	79	76	86
320-75270-16	HOM18-SS	83	88	79	79	71	73	77	69
320-75270-17	HOM19-SS	85	86	90	84	87	77	86	78
320-75270-18	FAA1-SS	73	74	74	73	63	69	67	66
320-75270-19	KD1-SS	83	83	77	79	73	71	76	75
320-75270-20	KD2-SS	89	94	85	90	84	80	86	84
320-75270-21	KD3-SS	66	69	63	57	58	49 *5-	55	55
320-75270-22	HOM7D-SS	96	108	100	89	88	90	93	94
320-75270-23	HOM11D-SS	81	103	91	93	89	81	89	82
320-75270-24	BL-SED	77	82	78	74	76	72	70	77
320-75270-25	LL-SED	99	109	102	95	92	103	97	96
320-75270-26	KD2-SUB1	88	98	91	88	91	85	90	83
320-75270-27	KD2-SUB2	101	115	102	108	94	95	99	93
320-75270-28	HOM11-SUB1	91	107	100	96	93	82	100	81
320-75270-29	HOM11-SUB2	99	106	96	100	89	93	99	87
320-75270-30	HOM4-SUB1	85	102	87	91	83	83	90	76
320-75270-31	HOM4-SUB2	95	96	89	92	84	86	84	70
320-75270-32	KD1-SUB1	94	110	93	103	90	96	101	86
320-75270-33	KD1-SUB2	105	102	92	81	84	78	84	73
320-75270-34	FAA1-SUB1	85	105	92	89	83	80	99	88
320-75270-35	FAA1-SUB2	90	98	89	96	83	93	94	92
320-75270-36	HOM5-SUB1	95	116	98	102	101	94	100	95
320-75270-37	HOM5-SUB2	108	124	107	114	115	101	98	99
320-75270-38	HOM6-SUB1	101	107	100	101	103	100	97	84
320-75270-39	HOM6D-SUB1	87	92	98	82	86	87	91	89
320-75270-40	HOM6-SUB2	91	113	93	97	100	96	96	89
320-75270-40 MS	HOM6-SUB2	90	99	92	94	90	88	95	81
320-75270-40 MSD	HOM6-SUB2	89	109	85	92	84	86	80	72
320-75270-41	KD3-SUB1	49 *5-	49 *5-	48 *5-	51	53	53	49 *5-	53
320-75270-42	KD3-SUB2	47 *5-	50	48 *5-	46 *5-	49 *5-	49 *5-	46 *5-	47 *5-
320-75270-43	HOM14-SUB1	71	66	63	52	64	53	45 *5-	49 *5-
320-75270-44	HOM14-SUB2	51	47 *5-	47 *5-	45 *5-	52	48 *5-	51	53

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

**Matrix: Solid**

**Prep Type: Total/NA**

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (50-150)
320-75270-45	HOM14D-SS	63	52	47 *5-	40 *5-	49 *5-	50	42 *5-	54
LCS 320-501777/2-A	Lab Control Sample	84	96	86	86	73	87	85	87
LCS 320-501779/2-A	Lab Control Sample	101	111	96	104	96	82	100	85
LCS 320-502318/2-A	Lab Control Sample	71	72	68	66	71	70	73	71
MB 320-501777/1-A	Method Blank	83	85	83	81	77	81	78	81
MB 320-501779/1-A	Method Blank	96	101	95	101	85	87	96	85
MB 320-502318/1-A	Method Blank	78	76	75	77	81	76	85	88

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-75270-1	HOM1-SS	86	74	63	71	77	81
320-75270-2	HOM2-SS	85	74	75	75	82	82
320-75270-3	HOM3-SS	83	84	81	72	79	93
320-75270-4	HOM4-SS	93	88	76	84	79	97
320-75270-5	HOM5-SS	82	77	63	58	55	79
320-75270-5 - DL	HOM5-SS			69			
320-75270-6	HOM6-SS	74	76	73	68	69	81
320-75270-7	HOM7-SS	87	73	71	65	71	83
320-75270-8	HOM9-SS	90	75	74	69	71	79
320-75270-9	HOM10-SS	80	67	70	86	83	82
320-75270-10	HOM11-SS	76	74	71	74	73	81
320-75270-11	HOM12-SS	87	76	71	73	74	87
320-75270-12	HOM13-SS	69	74	67	65	70	79
320-75270-12 MS	HOM13-SS	79	74	76	69	77	84
320-75270-12 MSD	HOM13-SS	81	74	76	69	77	80
320-75270-13	HOM14-SS	90	83	80	75	84	92
320-75270-14	HOM15-SS	85	76	74	67	74	85
320-75270-15	HOM16-SS	80	81	78	69	80	85
320-75270-16	HOM18-SS	80	74	69	72	75	83
320-75270-17	HOM19-SS	88	84	76	74	88	89
320-75270-18	FAA1-SS	84	71	71	59	67	71
320-75270-19	KD1-SS	82	73	73	74	77	80
320-75270-20	KD2-SS	84	91	77	93	97	91
320-75270-21	KD3-SS	81	72	70	47 *5-	39 *5-	77
320-75270-22	HOM7D-SS	111	108	93	74	88	105
320-75270-23	HOM11D-SS	87	87	90	87	93	97
320-75270-24	BL-SED	85	82	70	72	64	88
320-75270-25	LL-SED	103	109	97	88	87	114
320-75270-26	KD2-SUB1	98	85	76	86	83	97
320-75270-27	KD2-SUB2	103	92	90	88	100	111
320-75270-28	HOM11-SUB1	93	91	86	89	90	109
320-75270-29	HOM11-SUB2	100	92	78	87	92	109
320-75270-30	HOM4-SUB1	99	83	83	79	90	98
320-75270-31	HOM4-SUB2	94	84	74	86	85	94
320-75270-32	KD1-SUB1	107	92	81	81	98	109
320-75270-33	KD1-SUB2	122	108	93	64	59	124
320-75270-34	FAA1-SUB1	98	92	86	83	86	94
320-75270-35	FAA1-SUB2	94	93	83	77	92	104
320-75270-36	HOM5-SUB1	112	93	91	87	97	111
320-75270-37	HOM5-SUB2	115	109	104	104	99	118

Eurofins TestAmerica, Sacramento

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

**Matrix: Solid**

**Prep Type: Total/NA**

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-75270-38	HOM6-SUB1	93	82	80	91	90	107
320-75270-39	HOM6D-SUB1	84	75	66	80	84	98
320-75270-40	HOM6-SUB2	102	89	85	87	89	108
320-75270-40 MS	HOM6-SUB2	97	94	84	80	93	102
320-75270-40 MSD	HOM6-SUB2	86	79	73	70	76	101
320-75270-41	KD3-SUB1	56	51	48 *5-	56	58	51
320-75270-42	KD3-SUB2	54	51	46 *5-	42 *5-	55	47 *5-
320-75270-43	HOM14-SUB1	81	69	53	55	47 *5-	72
320-75270-44	HOM14-SUB2	53	49 *5-	47 *5-	39 *5-	55	47 *5-
320-75270-45	HOM14D-SS	70	58	47 *5-	42 *5-	45 *5-	54
LCS 320-501777/2-A	Lab Control Sample	99	89	82	79	81	89
LCS 320-501779/2-A	Lab Control Sample	108	108	98	92	101	116
LCS 320-502318/2-A	Lab Control Sample	79	72	65	67	79	67
MB 320-501777/1-A	Method Blank	93	85	84	75	83	79
MB 320-501779/1-A	Method Blank	109	105	92	93	100	104
MB 320-502318/1-A	Method Blank	83	74	71	78	88	78

#### Surrogate Legend

- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

**Lab Sample ID: MB 320-501777/1-A**  
**Matrix: Solid**  
**Analysis Batch: 502189**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501777**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		06/25/21 11:20	06/27/21 03:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		06/25/21 11:20	06/27/21 03:27	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C4 PFHpA	85		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C4 PFOA	83		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C5 PFNA	81		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C2 PFDA	77		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C2 PFUnA	81		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C2 PFDoA	78		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C2 PFTeDA	81		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C3 PFBS	93		50 - 150	06/25/21 11:20	06/27/21 03:27	1
18O2 PFHxS	85		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C4 PFOS	84		50 - 150	06/25/21 11:20	06/27/21 03:27	1
d3-NMeFOSAA	75		50 - 150	06/25/21 11:20	06/27/21 03:27	1
d5-NEtFOSAA	83		50 - 150	06/25/21 11:20	06/27/21 03:27	1
13C3 HFPO-DA	79		50 - 150	06/25/21 11:20	06/27/21 03:27	1

**Lab Sample ID: LCS 320-501777/2-A**  
**Matrix: Solid**  
**Analysis Batch: 502189**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501777**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.04		ug/Kg		102	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	2.03		ug/Kg		102	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.19		ug/Kg		109	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.40		ug/Kg		120	72 - 129

Eurofins TestAmerica, Sacramento



# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-501777/2-A**  
**Matrix: Solid**  
**Analysis Batch: 502189**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501777**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	2.00	2.25		ug/Kg		113	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.18		ug/Kg		109	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.08		ug/Kg		104	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.98		ug/Kg		99	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.07		ug/Kg		104	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.58		ug/Kg		89	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.04		ug/Kg		112	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	2.02		ug/Kg		109	68 - 136
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	2.00	2.20		ug/Kg		110	63 - 144
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	2.00	2.11		ug/Kg		105	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	2.06		ug/Kg		110	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.00		ug/Kg		100	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	2.27		ug/Kg		121	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.32		ug/Kg		123	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	84		50 - 150
13C4 PFHpA	96		50 - 150
13C4 PFOA	86		50 - 150
13C5 PFNA	86		50 - 150
13C2 PFDA	73		50 - 150
13C2 PFUnA	87		50 - 150
13C2 PFDoA	85		50 - 150
13C2 PFTeDA	87		50 - 150
13C3 PFBS	99		50 - 150
18O2 PFHxS	89		50 - 150
13C4 PFOS	82		50 - 150
d3-NMeFOSAA	79		50 - 150
d5-NEtFOSAA	81		50 - 150
13C3 HFPO-DA	89		50 - 150

**Lab Sample ID: 320-75270-12 MS**  
**Matrix: Solid**  
**Analysis Batch: 502189**

**Client Sample ID: HOM13-SS**  
**Prep Type: Total/NA**  
**Prep Batch: 501777**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	0.12	J	2.20	2.26		ug/Kg	⊛	97	70 - 132
Perfluoroheptanoic acid (PFHpA)	0.088	J	2.20	2.27		ug/Kg	⊛	99	71 - 131
Perfluorooctanoic acid (PFOA)	0.24		2.20	2.64		ug/Kg	⊛	109	69 - 133

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-75270-12 MS**

**Matrix: Solid**

**Analysis Batch: 502189**

**Client Sample ID: HOM13-SS**

**Prep Type: Total/NA**

**Prep Batch: 501777**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Perfluorononanoic acid (PFNA)	0.19	J	2.20	2.55		ug/Kg	⊛	107	72 - 129	
Perfluorodecanoic acid (PFDA)	0.31		2.20	2.50		ug/Kg	⊛	99	69 - 133	
Perfluoroundecanoic acid (PFUnA)	0.54		2.20	3.32		ug/Kg	⊛	126	64 - 136	
Perfluorododecanoic acid (PFDoA)	ND		2.20	2.60		ug/Kg	⊛	118	69 - 135	
Perfluorotridecanoic acid (PFTriA)	0.057	J	2.20	1.95		ug/Kg	⊛	86	66 - 139	
Perfluorotetradecanoic acid (PFTeA)	ND		2.20	2.43		ug/Kg	⊛	110	69 - 133	
Perfluorobutanesulfonic acid (PFBS)	0.051	J	1.95	1.82		ug/Kg	⊛	91	72 - 128	
Perfluorohexanesulfonic acid (PFHxS)	1.4	F1	2.01	3.76		ug/Kg	⊛	117	67 - 130	
Perfluorooctanesulfonic acid (PFOS)	3.8	I F1	2.05	5.76		ug/Kg	⊛	94	68 - 136	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.20	2.41		ug/Kg	⊛	110	63 - 144	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.20	2.47		ug/Kg	⊛	112	61 - 139	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.05	2.15		ug/Kg	⊛	104	75 - 135	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.20	2.26		ug/Kg	⊛	102	77 - 137	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.08	1.97		ug/Kg	⊛	95	76 - 136	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.08	2.34		ug/Kg	⊛	113	79 - 139	

Isotope Dilution	MS	MS	Limits
	%Recovery	Qualifier	
13C2 PFHxA	84		50 - 150
13C4 PFHpA	89		50 - 150
13C4 PFOA	79		50 - 150
13C5 PFNA	87		50 - 150
13C2 PFDA	73		50 - 150
13C2 PFUnA	74		50 - 150
13C2 PFDoA	82		50 - 150
13C2 PFTeDA	75		50 - 150
13C3 PFBS	79		50 - 150
18O2 PFHxS	74		50 - 150
13C4 PFOS	76		50 - 150
d3-NMeFOSAA	69		50 - 150
d5-NEtFOSAA	77		50 - 150
13C3 HFPO-DA	84		50 - 150

**Lab Sample ID: 320-75270-12 MSD**

**Matrix: Solid**

**Analysis Batch: 502189**

**Client Sample ID: HOM13-SS**

**Prep Type: Total/NA**

**Prep Batch: 501777**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	0.12	J	2.14	2.28		ug/Kg	⊛	101	70 - 132	1	30	
Perfluoroheptanoic acid (PFHpA)	0.088	J	2.14	2.38		ug/Kg	⊛	107	71 - 131	5	30	

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-75270-12 MSD**

**Matrix: Solid**

**Analysis Batch: 502189**

**Client Sample ID: HOM13-SS**

**Prep Type: Total/NA**

**Prep Batch: 501777**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Perfluorooctanoic acid (PFOA)	0.24		2.14	2.46		ug/Kg	☼	104	69 - 133	7	30
Perfluorononanoic acid (PFNA)	0.19	J	2.14	2.62		ug/Kg	☼	113	72 - 129	2	30
Perfluorodecanoic acid (PFDA)	0.31		2.14	2.64		ug/Kg	☼	109	69 - 133	6	30
Perfluoroundecanoic acid (PFUnA)	0.54		2.14	2.69		ug/Kg	☼	101	64 - 136	21	30
Perfluorododecanoic acid (PFDoA)	ND		2.14	2.31		ug/Kg	☼	108	69 - 135	12	30
Perfluorotridecanoic acid (PFTriA)	0.057	J	2.14	2.05		ug/Kg	☼	93	66 - 139	5	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.14	2.68		ug/Kg	☼	125	69 - 133	10	30
Perfluorobutanesulfonic acid (PFBS)	0.051	J	1.89	1.93		ug/Kg	☼	99	72 - 128	5	30
Perfluorohexanesulfonic acid (PFHxS)	1.4	F1	1.94	4.03	F1	ug/Kg	☼	134	67 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	3.8	I F1	1.98	7.28	F1	ug/Kg	☼	174	68 - 136	23	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.14	2.53		ug/Kg	☼	118	63 - 144	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.14	2.51		ug/Kg	☼	118	61 - 139	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.99	2.24		ug/Kg	☼	112	75 - 135	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.14	2.23		ug/Kg	☼	104	77 - 137	1	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.01	2.09		ug/Kg	☼	104	76 - 136	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.01	2.40		ug/Kg	☼	119	79 - 139	2	30

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
13C2 PFHxA	84		50 - 150
13C4 PFHpA	83		50 - 150
13C4 PFOA	84		50 - 150
13C5 PFNA	82		50 - 150
13C2 PFDA	71		50 - 150
13C2 PFUnA	79		50 - 150
13C2 PFDoA	87		50 - 150
13C2 PFTeDA	74		50 - 150
13C3 PFBS	81		50 - 150
18O2 PFHxS	74		50 - 150
13C4 PFOS	76		50 - 150
d3-NMeFOSAA	69		50 - 150
d5-NEtFOSAA	77		50 - 150
13C3 HFPO-DA	80		50 - 150

**Lab Sample ID: MB 320-501779/1-A**

**Matrix: Solid**

**Analysis Batch: 502196**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 501779**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		06/25/21 11:23	06/27/21 10:12	1

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: MB 320-501779/1-A**  
**Matrix: Solid**  
**Analysis Batch: 502196**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501779**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		06/25/21 11:23	06/27/21 10:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		06/25/21 11:23	06/27/21 10:12	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C4 PFHpA	101		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C4 PFOA	95		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C5 PFNA	101		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C2 PFDA	85		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C2 PFUnA	87		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C2 PFDoA	96		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C2 PFTeDA	85		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C3 PFBS	109		50 - 150	06/25/21 11:23	06/27/21 10:12	1
18O2 PFHxS	105		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C4 PFOS	92		50 - 150	06/25/21 11:23	06/27/21 10:12	1
d3-NMeFOSAA	93		50 - 150	06/25/21 11:23	06/27/21 10:12	1
d5-NEtFOSAA	100		50 - 150	06/25/21 11:23	06/27/21 10:12	1
13C3 HFPO-DA	104		50 - 150	06/25/21 11:23	06/27/21 10:12	1

**Lab Sample ID: LCS 320-501779/2-A**  
**Matrix: Solid**  
**Analysis Batch: 502196**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501779**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.00		ug/Kg		100	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	1.96		ug/Kg		98	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.30		ug/Kg		115	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.27		ug/Kg		113	72 - 129
Perfluorodecanoic acid (PFDA)	2.00	2.07		ug/Kg		104	69 - 133

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-501779/2-A**  
**Matrix: Solid**  
**Analysis Batch: 502196**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501779**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	2.00	2.62		ug/Kg		131	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.10		ug/Kg		105	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.97		ug/Kg		98	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.32		ug/Kg		116	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.62		ug/Kg		91	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.91		ug/Kg		105	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.93		ug/Kg		104	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.23		ug/Kg		112	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.98	J	ug/Kg		99	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	2.05		ug/Kg		110	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.97		ug/Kg		98	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.88	2.00		ug/Kg		106	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.28		ug/Kg		121	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	101		50 - 150
13C4 PFHpA	111		50 - 150
13C4 PFOA	96		50 - 150
13C5 PFNA	104		50 - 150
13C2 PFDA	96		50 - 150
13C2 PFUnA	82		50 - 150
13C2 PFDoA	100		50 - 150
13C2 PFTeDA	85		50 - 150
13C3 PFBS	108		50 - 150
18O2 PFHxS	108		50 - 150
13C4 PFOS	98		50 - 150
d3-NMeFOSAA	92		50 - 150
d5-NEtFOSAA	101		50 - 150
13C3 HFPO-DA	116		50 - 150

**Lab Sample ID: 320-75270-40 MS**  
**Matrix: Solid**  
**Analysis Batch: 502196**

**Client Sample ID: HOM6-SUB2**  
**Prep Type: Total/NA**  
**Prep Batch: 501779**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Perfluorohexanoic acid (PFHxA)	ND		2.08	2.22		ug/Kg	⊛	107	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		2.08	2.38		ug/Kg	⊛	114	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.08	2.37		ug/Kg	⊛	114	69 - 133
Perfluorononanoic acid (PFNA)	ND		2.08	2.41		ug/Kg	⊛	116	72 - 129

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-75270-40 MS**

**Matrix: Solid**

**Analysis Batch: 502196**

**Client Sample ID: HOM6-SUB2**

**Prep Type: Total/NA**

**Prep Batch: 501779**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	ND		2.08	2.33		ug/Kg	✳	112	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.08	2.50		ug/Kg	✳	120	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.08	2.08		ug/Kg	✳	100	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.08	2.09		ug/Kg	✳	100	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.08	2.33		ug/Kg	✳	112	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.84	1.84		ug/Kg	✳	100	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.89	2.07		ug/Kg	✳	109	67 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		1.93	2.17		ug/Kg	✳	113	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.08	2.43		ug/Kg	✳	117	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.08	2.33		ug/Kg	✳	112	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.94	2.37		ug/Kg	✳	122	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.08	2.15		ug/Kg	✳	103	77 - 137
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		1.96	2.39		ug/Kg	✳	122	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	1.96	2.66		ug/Kg	✳	135	79 - 139

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2 PFHxA	90		50 - 150
13C4 PFHpA	99		50 - 150
13C4 PFOA	92		50 - 150
13C5 PFNA	94		50 - 150
13C2 PFDA	90		50 - 150
13C2 PFUnA	88		50 - 150
13C2 PFDoA	95		50 - 150
13C2 PFTeDA	81		50 - 150
13C3 PFBS	97		50 - 150
18O2 PFHxS	94		50 - 150
13C4 PFOS	84		50 - 150
d3-NMeFOSAA	80		50 - 150
d5-NEtFOSAA	93		50 - 150
13C3 HFPO-DA	102		50 - 150

**Lab Sample ID: 320-75270-40 MSD**

**Matrix: Solid**

**Analysis Batch: 502196**

**Client Sample ID: HOM6-SUB2**

**Prep Type: Total/NA**

**Prep Batch: 501779**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.26	2.46		ug/Kg	✳	109	70 - 132	10	30
Perfluoroheptanoic acid (PFHpA)	ND		2.26	2.48		ug/Kg	✳	110	71 - 131	4	30
Perfluorooctanoic acid (PFOA)	ND		2.26	2.51		ug/Kg	✳	111	69 - 133	6	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: 320-75270-40 MSD**

**Matrix: Solid**

**Analysis Batch: 502196**

**Client Sample ID: HOM6-SUB2**

**Prep Type: Total/NA**

**Prep Batch: 501779**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	ND		2.26	2.61		ug/Kg	☼	115	72 - 129	8	30
Perfluorodecanoic acid (PFDA)	ND		2.26	2.48		ug/Kg	☼	110	69 - 133	6	30
Perfluoroundecanoic acid (PFUnA)	ND		2.26	2.59		ug/Kg	☼	115	64 - 136	4	30
Perfluorododecanoic acid (PFDoA)	ND		2.26	2.48		ug/Kg	☼	109	69 - 135	18	30
Perfluorotridecanoic acid (PFTriA)	ND		2.26	2.17		ug/Kg	☼	96	66 - 139	4	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.26	2.65		ug/Kg	☼	117	69 - 133	13	30
Perfluorobutanesulfonic acid (PFBS)	ND		2.00	1.98		ug/Kg	☼	99	72 - 128	7	30
Perfluorohexanesulfonic acid (PFHxS)	ND		2.06	2.33		ug/Kg	☼	113	67 - 130	12	30
Perfluorooctanesulfonic acid (PFOS)	ND		2.10	2.34		ug/Kg	☼	112	68 - 136	7	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.26	2.83		ug/Kg	☼	125	63 - 144	15	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.26	2.61		ug/Kg	☼	115	61 - 139	11	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.11	2.48		ug/Kg	☼	118	75 - 135	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.26	2.51		ug/Kg	☼	111	77 - 137	15	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.13	2.84		ug/Kg	☼	133	76 - 136	17	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	F1	2.13	3.37	F1	ug/Kg	☼	158	79 - 139	24	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	89		50 - 150
13C4 PFHpA	109		50 - 150
13C4 PFOA	85		50 - 150
13C5 PFNA	92		50 - 150
13C2 PFDA	84		50 - 150
13C2 PFUnA	86		50 - 150
13C2 PFDoA	80		50 - 150
13C2 PFTeDA	72		50 - 150
13C3 PFBS	86		50 - 150
18O2 PFHxS	79		50 - 150
13C4 PFOS	73		50 - 150
d3-NMeFOSAA	70		50 - 150
d5-NEtFOSAA	76		50 - 150
13C3 HFPO-DA	101		50 - 150

**Lab Sample ID: MB 320-502318/1-A**

**Matrix: Solid**

**Analysis Batch: 503629**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 502318**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.042	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.029	ug/Kg		06/27/21 18:38	07/01/21 17:14	1

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: MB 320-502318/1-A**  
**Matrix: Solid**  
**Analysis Batch: 503629**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 502318**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	ND		0.20	0.086	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.036	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.022	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.036	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.067	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.051	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.054	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.025	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.031	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.50	0.20	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.39	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.37	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.027	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.11	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.022	ug/Kg		06/27/21 18:38	07/01/21 17:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.018	ug/Kg		06/27/21 18:38	07/01/21 17:14	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	78		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C4 PFHpA	76		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C4 PFOA	75		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C5 PFNA	77		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C2 PFDA	81		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C2 PFUnA	76		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C2 PFDoA	85		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C2 PFTeDA	88		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C3 PFBS	83		50 - 150	06/27/21 18:38	07/01/21 17:14	1
18O2 PFHxS	74		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C4 PFOS	71		50 - 150	06/27/21 18:38	07/01/21 17:14	1
d3-NMeFOSAA	78		50 - 150	06/27/21 18:38	07/01/21 17:14	1
d5-NEtFOSAA	88		50 - 150	06/27/21 18:38	07/01/21 17:14	1
13C3 HFPO-DA	78		50 - 150	06/27/21 18:38	07/01/21 17:14	1

**Lab Sample ID: LCS 320-502318/2-A**  
**Matrix: Solid**  
**Analysis Batch: 503629**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 502318**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.10		ug/Kg		105	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	2.09		ug/Kg		104	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.13		ug/Kg		106	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.27		ug/Kg		113	72 - 129
Perfluorodecanoic acid (PFDA)	2.00	2.15		ug/Kg		108	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	2.20		ug/Kg		110	64 - 136

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# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-502318/2-A**  
**Matrix: Solid**  
**Analysis Batch: 503629**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 502318**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	2.00	2.07		ug/Kg		104	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	2.10		ug/Kg		105	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.42		ug/Kg		121	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.77	1.83		ug/Kg		103	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.78		ug/Kg		98	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	2.04		ug/Kg		110	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.32		ug/Kg		116	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.20		ug/Kg		110	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86	2.20		ug/Kg		118	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	2.22		ug/Kg		111	77 - 137
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	1.88	2.17		ug/Kg		115	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	2.22		ug/Kg		118	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	71		50 - 150
13C4 PFHpA	72		50 - 150
13C4 PFOA	68		50 - 150
13C5 PFNA	66		50 - 150
13C2 PFDA	71		50 - 150
13C2 PFUnA	70		50 - 150
13C2 PFDoA	73		50 - 150
13C2 PFTeDA	71		50 - 150
13C3 PFBS	79		50 - 150
18O2 PFHxS	72		50 - 150
13C4 PFOS	65		50 - 150
d3-NMeFOSAA	67		50 - 150
d5-NEtFOSAA	79		50 - 150
13C3 HFPO-DA	67		50 - 150

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 320-75270-3 DU**  
**Matrix: Solid**  
**Analysis Batch: 501506**

**Client Sample ID: HOM3-SS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	4.4		4.2		%		4	20
Percent Solids	95.6		95.8		%		0.2	20

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# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Method: D 2216 - Percent Moisture (Continued)

**Lab Sample ID: 320-75270-22 DU**  
**Matrix: Solid**  
**Analysis Batch: 501555**

**Client Sample ID: HOM7D-SS**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Moisture	5.7		5.5		%		3	20
Percent Solids	94.3		94.5		%		0.2	20

**Lab Sample ID: 320-75270-39 DU**  
**Matrix: Solid**  
**Analysis Batch: 501570**

**Client Sample ID: HOM6D-SUB1**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Moisture	15.6		15.2		%		3	20
Percent Solids	84.4		84.8		%		0.5	20



# QC Association Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## LCMS

### Prep Batch: 501777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-1	HOM1-SS	Total/NA	Solid	SHAKE	
320-75270-2	HOM2-SS	Total/NA	Solid	SHAKE	
320-75270-3	HOM3-SS	Total/NA	Solid	SHAKE	
320-75270-4	HOM4-SS	Total/NA	Solid	SHAKE	
320-75270-5 - DL	HOM5-SS	Total/NA	Solid	SHAKE	
320-75270-5	HOM5-SS	Total/NA	Solid	SHAKE	
320-75270-6	HOM6-SS	Total/NA	Solid	SHAKE	
320-75270-7	HOM7-SS	Total/NA	Solid	SHAKE	
320-75270-8	HOM9-SS	Total/NA	Solid	SHAKE	
320-75270-9	HOM10-SS	Total/NA	Solid	SHAKE	
320-75270-10	HOM11-SS	Total/NA	Solid	SHAKE	
320-75270-11	HOM12-SS	Total/NA	Solid	SHAKE	
320-75270-12	HOM13-SS	Total/NA	Solid	SHAKE	
320-75270-13	HOM14-SS	Total/NA	Solid	SHAKE	
320-75270-14	HOM15-SS	Total/NA	Solid	SHAKE	
320-75270-15	HOM16-SS	Total/NA	Solid	SHAKE	
320-75270-16	HOM18-SS	Total/NA	Solid	SHAKE	
320-75270-17	HOM19-SS	Total/NA	Solid	SHAKE	
320-75270-18	FAA1-SS	Total/NA	Solid	SHAKE	
320-75270-19	KD1-SS	Total/NA	Solid	SHAKE	
320-75270-20	KD2-SS	Total/NA	Solid	SHAKE	
MB 320-501777/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-501777/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-75270-12 MS	HOM13-SS	Total/NA	Solid	SHAKE	
320-75270-12 MSD	HOM13-SS	Total/NA	Solid	SHAKE	

### Prep Batch: 501779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-21	KD3-SS	Total/NA	Solid	SHAKE	
320-75270-22	HOM7D-SS	Total/NA	Solid	SHAKE	
320-75270-23	HOM11D-SS	Total/NA	Solid	SHAKE	
320-75270-24	BL-SED	Total/NA	Solid	SHAKE	
320-75270-25	LL-SED	Total/NA	Solid	SHAKE	
320-75270-26	KD2-SUB1	Total/NA	Solid	SHAKE	
320-75270-27	KD2-SUB2	Total/NA	Solid	SHAKE	
320-75270-28	HOM11-SUB1	Total/NA	Solid	SHAKE	
320-75270-29	HOM11-SUB2	Total/NA	Solid	SHAKE	
320-75270-30	HOM4-SUB1	Total/NA	Solid	SHAKE	
320-75270-31	HOM4-SUB2	Total/NA	Solid	SHAKE	
320-75270-32	KD1-SUB1	Total/NA	Solid	SHAKE	
320-75270-33	KD1-SUB2	Total/NA	Solid	SHAKE	
320-75270-34	FAA1-SUB1	Total/NA	Solid	SHAKE	
320-75270-35	FAA1-SUB2	Total/NA	Solid	SHAKE	
320-75270-36	HOM5-SUB1	Total/NA	Solid	SHAKE	
320-75270-37	HOM5-SUB2	Total/NA	Solid	SHAKE	
320-75270-38	HOM6-SUB1	Total/NA	Solid	SHAKE	
320-75270-39	HOM6D-SUB1	Total/NA	Solid	SHAKE	
320-75270-40	HOM6-SUB2	Total/NA	Solid	SHAKE	
MB 320-501779/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-501779/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-75270-40 MS	HOM6-SUB2	Total/NA	Solid	SHAKE	

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# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## LCMS (Continued)

### Prep Batch: 501779 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-40 MSD	HOM6-SUB2	Total/NA	Solid	SHAKE	

### Analysis Batch: 502189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-1	HOM1-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-2	HOM2-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-3	HOM3-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-4	HOM4-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-5	HOM5-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-6	HOM6-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-7	HOM7-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-8	HOM9-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-9	HOM10-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-10	HOM11-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-11	HOM12-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-12	HOM13-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-13	HOM14-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-14	HOM15-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-15	HOM16-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-16	HOM18-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-17	HOM19-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-18	FAA1-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-19	KD1-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-20	KD2-SS	Total/NA	Solid	EPA 537(Mod)	501777
MB 320-501777/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	501777
LCS 320-501777/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-12 MS	HOM13-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-12 MSD	HOM13-SS	Total/NA	Solid	EPA 537(Mod)	501777

### Analysis Batch: 502196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-21	KD3-SS	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-22	HOM7D-SS	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-23	HOM11D-SS	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-24	BL-SED	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-25	LL-SED	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-26	KD2-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-27	KD2-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-28	HOM11-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-29	HOM11-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-30	HOM4-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-31	HOM4-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-32	KD1-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-33	KD1-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-34	FAA1-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-35	FAA1-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-36	HOM5-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-37	HOM5-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-38	HOM6-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-39	HOM6D-SUB1	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-40	HOM6-SUB2	Total/NA	Solid	EPA 537(Mod)	501779

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# QC Association Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## LCMS (Continued)

### Analysis Batch: 502196 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-501779/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	501779
LCS 320-501779/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-40 MS	HOM6-SUB2	Total/NA	Solid	EPA 537(Mod)	501779
320-75270-40 MSD	HOM6-SUB2	Total/NA	Solid	EPA 537(Mod)	501779

### Prep Batch: 502318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-41	KD3-SUB1	Total/NA	Solid	SHAKE	
320-75270-42	KD3-SUB2	Total/NA	Solid	SHAKE	
320-75270-43	HOM14-SUB1	Total/NA	Solid	SHAKE	
320-75270-44	HOM14-SUB2	Total/NA	Solid	SHAKE	
320-75270-45	HOM14D-SS	Total/NA	Solid	SHAKE	
MB 320-502318/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-502318/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

### Analysis Batch: 503296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-43	HOM14-SUB1	Total/NA	Solid	EPA 537(Mod)	502318
320-75270-44	HOM14-SUB2	Total/NA	Solid	EPA 537(Mod)	502318
320-75270-45	HOM14D-SS	Total/NA	Solid	EPA 537(Mod)	502318

### Analysis Batch: 503629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-5 - DL	HOM5-SS	Total/NA	Solid	EPA 537(Mod)	501777
320-75270-41	KD3-SUB1	Total/NA	Solid	EPA 537(Mod)	502318
320-75270-42	KD3-SUB2	Total/NA	Solid	EPA 537(Mod)	502318
MB 320-502318/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	502318
LCS 320-502318/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	502318

## General Chemistry

### Analysis Batch: 501506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-1	HOM1-SS	Total/NA	Solid	D 2216	
320-75270-2	HOM2-SS	Total/NA	Solid	D 2216	
320-75270-3	HOM3-SS	Total/NA	Solid	D 2216	
320-75270-4	HOM4-SS	Total/NA	Solid	D 2216	
320-75270-5	HOM5-SS	Total/NA	Solid	D 2216	
320-75270-6	HOM6-SS	Total/NA	Solid	D 2216	
320-75270-7	HOM7-SS	Total/NA	Solid	D 2216	
320-75270-8	HOM9-SS	Total/NA	Solid	D 2216	
320-75270-9	HOM10-SS	Total/NA	Solid	D 2216	
320-75270-10	HOM11-SS	Total/NA	Solid	D 2216	
320-75270-11	HOM12-SS	Total/NA	Solid	D 2216	
320-75270-12	HOM13-SS	Total/NA	Solid	D 2216	
320-75270-13	HOM14-SS	Total/NA	Solid	D 2216	
320-75270-14	HOM15-SS	Total/NA	Solid	D 2216	
320-75270-15	HOM16-SS	Total/NA	Solid	D 2216	
320-75270-16	HOM18-SS	Total/NA	Solid	D 2216	
320-75270-17	HOM19-SS	Total/NA	Solid	D 2216	
320-75270-18	FAA1-SS	Total/NA	Solid	D 2216	

Eurofins TestAmerica, Sacramento

# QC Association Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## General Chemistry (Continued)

### Analysis Batch: 501506 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-19	KD1-SS	Total/NA	Solid	D 2216	
320-75270-3 DU	HOM3-SS	Total/NA	Solid	D 2216	

### Analysis Batch: 501555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-20	KD2-SS	Total/NA	Solid	D 2216	
320-75270-21	KD3-SS	Total/NA	Solid	D 2216	
320-75270-22	HOM7D-SS	Total/NA	Solid	D 2216	
320-75270-23	HOM11D-SS	Total/NA	Solid	D 2216	
320-75270-24	BL-SED	Total/NA	Solid	D 2216	
320-75270-25	LL-SED	Total/NA	Solid	D 2216	
320-75270-26	KD2-SUB1	Total/NA	Solid	D 2216	
320-75270-27	KD2-SUB2	Total/NA	Solid	D 2216	
320-75270-28	HOM11-SUB1	Total/NA	Solid	D 2216	
320-75270-29	HOM11-SUB2	Total/NA	Solid	D 2216	
320-75270-30	HOM4-SUB1	Total/NA	Solid	D 2216	
320-75270-31	HOM4-SUB2	Total/NA	Solid	D 2216	
320-75270-32	KD1-SUB1	Total/NA	Solid	D 2216	
320-75270-33	KD1-SUB2	Total/NA	Solid	D 2216	
320-75270-34	FAA1-SUB1	Total/NA	Solid	D 2216	
320-75270-35	FAA1-SUB2	Total/NA	Solid	D 2216	
320-75270-36	HOM5-SUB1	Total/NA	Solid	D 2216	
320-75270-37	HOM5-SUB2	Total/NA	Solid	D 2216	
320-75270-38	HOM6-SUB1	Total/NA	Solid	D 2216	
320-75270-22 DU	HOM7D-SS	Total/NA	Solid	D 2216	

### Analysis Batch: 501570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75270-39	HOM6D-SUB1	Total/NA	Solid	D 2216	
320-75270-40	HOM6-SUB2	Total/NA	Solid	D 2216	
320-75270-41	KD3-SUB1	Total/NA	Solid	D 2216	
320-75270-42	KD3-SUB2	Total/NA	Solid	D 2216	
320-75270-43	HOM14-SUB1	Total/NA	Solid	D 2216	
320-75270-44	HOM14-SUB2	Total/NA	Solid	D 2216	
320-75270-45	HOM14D-SS	Total/NA	Solid	D 2216	
320-75270-39 DU	HOM6D-SUB1	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM1-SS

Date Collected: 06/17/21 09:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM1-SS

Date Collected: 06/17/21 09:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-1

Matrix: Solid

Percent Solids: 94.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 03:45	RS1	TAL SAC

## Client Sample ID: HOM2-SS

Date Collected: 06/17/21 11:19

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM2-SS

Date Collected: 06/17/21 11:19

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-2

Matrix: Solid

Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.60 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 03:54	RS1	TAL SAC

## Client Sample ID: HOM3-SS

Date Collected: 06/17/21 09:50

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM3-SS

Date Collected: 06/17/21 09:50

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-3

Matrix: Solid

Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.66 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:04	RS1	TAL SAC

## Client Sample ID: HOM4-SS

Date Collected: 06/14/21 18:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

Eurofins TestAmerica, Sacramento

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM4-SS

Date Collected: 06/14/21 18:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-4

Matrix: Solid

Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:13	RS1	TAL SAC

## Client Sample ID: HOM5-SS

Date Collected: 06/15/21 13:25

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM5-SS

Date Collected: 06/15/21 13:25

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-5

Matrix: Solid

Percent Solids: 63.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	DL		5.49 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			503629	07/01/21 17:05	RS1	TAL SAC
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:22	RS1	TAL SAC

## Client Sample ID: HOM6-SS

Date Collected: 06/15/21 14:38

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM6-SS

Date Collected: 06/15/21 14:38

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-6

Matrix: Solid

Percent Solids: 49.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:31	RS1	TAL SAC

## Client Sample ID: HOM7-SS

Date Collected: 06/17/21 09:58

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC



# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM7-SS

Date Collected: 06/17/21 09:58

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-7

Matrix: Solid

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.67 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:40	RS1	TAL SAC

## Client Sample ID: HOM9-SS

Date Collected: 06/17/21 11:30

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM9-SS

Date Collected: 06/17/21 11:30

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-8

Matrix: Solid

Percent Solids: 89.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.42 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 04:49	RS1	TAL SAC

## Client Sample ID: HOM10-SS

Date Collected: 06/17/21 10:15

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM10-SS

Date Collected: 06/17/21 10:15

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-9

Matrix: Solid

Percent Solids: 96.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 05:17	RS1	TAL SAC

## Client Sample ID: HOM11-SS

Date Collected: 06/14/21 12:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: HOM11-SS**

**Lab Sample ID: 320-75270-10**

**Date Collected: 06/14/21 12:10**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 88.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 05:26	RS1	TAL SAC

**Client Sample ID: HOM12-SS**

**Lab Sample ID: 320-75270-11**

**Date Collected: 06/17/21 11:37**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: HOM12-SS**

**Lab Sample ID: 320-75270-11**

**Date Collected: 06/17/21 11:37**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 84.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 05:35	RS1	TAL SAC

**Client Sample ID: HOM13-SS**

**Lab Sample ID: 320-75270-12**

**Date Collected: 06/17/21 10:23**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: HOM13-SS**

**Lab Sample ID: 320-75270-12**

**Date Collected: 06/17/21 10:23**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 89.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 05:44	RS1	TAL SAC

**Client Sample ID: HOM14-SS**

**Lab Sample ID: 320-75270-13**

**Date Collected: 06/15/21 17:45**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM14-SS

Date Collected: 06/15/21 17:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-13

Matrix: Solid

Percent Solids: 69.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 06:12	RS1	TAL SAC

## Client Sample ID: HOM15-SS

Date Collected: 06/17/21 11:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM15-SS

Date Collected: 06/17/21 11:45

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-14

Matrix: Solid

Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 06:21	RS1	TAL SAC

## Client Sample ID: HOM16-SS

Date Collected: 06/17/21 10:44

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM16-SS

Date Collected: 06/17/21 10:44

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-15

Matrix: Solid

Percent Solids: 91.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.49 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 06:30	RS1	TAL SAC

## Client Sample ID: HOM18-SS

Date Collected: 06/17/21 11:55

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-16

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM18-SS

Date Collected: 06/17/21 11:55

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-16

Matrix: Solid

Percent Solids: 90.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 06:39	RS1	TAL SAC

## Client Sample ID: HOM19-SS

Date Collected: 06/17/21 13:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-17

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM19-SS

Date Collected: 06/17/21 13:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-17

Matrix: Solid

Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.59 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 07:06	RS1	TAL SAC

## Client Sample ID: FAA1-SS

Date Collected: 06/15/21 11:50

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-18

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: FAA1-SS

Date Collected: 06/15/21 11:50

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-18

Matrix: Solid

Percent Solids: 81.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 07:15	RS1	TAL SAC

## Client Sample ID: KD1-SS

Date Collected: 06/15/21 09:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-19

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501506	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: KD1-SS**

**Lab Sample ID: 320-75270-19**

Date Collected: 06/15/21 09:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 75.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 07:25	RS1	TAL SAC

**Client Sample ID: KD2-SS**

**Lab Sample ID: 320-75270-20**

Date Collected: 06/14/21 17:00

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: KD2-SS**

**Lab Sample ID: 320-75270-20**

Date Collected: 06/14/21 17:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 87.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.52 g	10.0 mL	501777	06/25/21 11:20	OP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502189	06/27/21 07:34	RS1	TAL SAC

**Client Sample ID: KD3-SS**

**Lab Sample ID: 320-75270-21**

Date Collected: 06/15/21 16:30

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: KD3-SS**

**Lab Sample ID: 320-75270-21**

Date Collected: 06/15/21 16:30

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 33.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 10:30	K1S	TAL SAC

**Client Sample ID: HOM7D-SS**

**Lab Sample ID: 320-75270-22**

Date Collected: 06/17/21 09:58

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM7D-SS

Date Collected: 06/17/21 09:58

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-22

Matrix: Solid

Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.41 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 10:39	K1S	TAL SAC

## Client Sample ID: HOM11D-SS

Date Collected: 06/14/21 12:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-23

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM11D-SS

Date Collected: 06/14/21 12:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-23

Matrix: Solid

Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.56 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 10:48	K1S	TAL SAC

## Client Sample ID: BL-SED

Date Collected: 06/17/21 13:35

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-24

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: BL-SED

Date Collected: 06/17/21 13:35

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-24

Matrix: Solid

Percent Solids: 7.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.65 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 10:57	K1S	TAL SAC

## Client Sample ID: LL-SED

Date Collected: 06/17/21 12:20

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-25

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: LL-SED**

**Lab Sample ID: 320-75270-25**

**Date Collected: 06/17/21 12:20**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 33.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.67 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 11:07	K1S	TAL SAC

**Client Sample ID: KD2-SUB1**

**Lab Sample ID: 320-75270-26**

**Date Collected: 06/14/21 17:25**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: KD2-SUB1**

**Lab Sample ID: 320-75270-26**

**Date Collected: 06/14/21 17:25**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 87.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 11:16	K1S	TAL SAC

**Client Sample ID: KD2-SUB2**

**Lab Sample ID: 320-75270-27**

**Date Collected: 06/14/21 17:49**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: KD2-SUB2**

**Lab Sample ID: 320-75270-27**

**Date Collected: 06/14/21 17:49**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 88.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 11:25	K1S	TAL SAC

**Client Sample ID: HOM11-SUB1**

**Lab Sample ID: 320-75270-28**

**Date Collected: 06/14/21 12:43**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM11-SUB1

Lab Sample ID: 320-75270-28

Date Collected: 06/14/21 12:43

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 11:34	K1S	TAL SAC

## Client Sample ID: HOM11-SUB2

Lab Sample ID: 320-75270-29

Date Collected: 06/14/21 16:04

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM11-SUB2

Lab Sample ID: 320-75270-29

Date Collected: 06/14/21 16:04

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:01	K1S	TAL SAC

## Client Sample ID: HOM4-SUB1

Lab Sample ID: 320-75270-30

Date Collected: 06/14/21 19:02

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM4-SUB1

Lab Sample ID: 320-75270-30

Date Collected: 06/14/21 19:02

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 91.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.60 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:10	K1S	TAL SAC

## Client Sample ID: HOM4-SUB2

Lab Sample ID: 320-75270-31

Date Collected: 06/14/21 19:24

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC



# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM4-SUB2

Date Collected: 06/14/21 19:24

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-31

Matrix: Solid

Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:20	K1S	TAL SAC

## Client Sample ID: KD1-SUB1

Date Collected: 06/15/21 09:42

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-32

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: KD1-SUB1

Date Collected: 06/15/21 09:42

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-32

Matrix: Solid

Percent Solids: 91.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:29	K1S	TAL SAC

## Client Sample ID: KD1-SUB2

Date Collected: 06/15/21 11:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-33

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: KD1-SUB2

Date Collected: 06/15/21 11:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-33

Matrix: Solid

Percent Solids: 70.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.11 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:38	K1S	TAL SAC

## Client Sample ID: FAA1-SUB1

Date Collected: 06/15/21 12:09

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75270-34

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

**Client Sample ID: FAA1-SUB1**

**Lab Sample ID: 320-75270-34**

**Date Collected: 06/15/21 12:09**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 83.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.59 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:47	K1S	TAL SAC

**Client Sample ID: FAA1-SUB2**

**Lab Sample ID: 320-75270-35**

**Date Collected: 06/15/21 12:38**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: FAA1-SUB2**

**Lab Sample ID: 320-75270-35**

**Date Collected: 06/15/21 12:38**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 88.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 12:56	K1S	TAL SAC

**Client Sample ID: HOM5-SUB1**

**Lab Sample ID: 320-75270-36**

**Date Collected: 06/15/21 13:45**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

**Client Sample ID: HOM5-SUB1**

**Lab Sample ID: 320-75270-36**

**Date Collected: 06/15/21 13:45**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

**Percent Solids: 86.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 13:05	K1S	TAL SAC

**Client Sample ID: HOM5-SUB2**

**Lab Sample ID: 320-75270-37**

**Date Collected: 06/15/21 13:50**

**Matrix: Solid**

**Date Received: 06/22/21 14:38**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM5-SUB2

Lab Sample ID: 320-75270-37

Date Collected: 06/15/21 13:50

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.42 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 13:14	K1S	TAL SAC

## Client Sample ID: HOM6-SUB1

Lab Sample ID: 320-75270-38

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501555	06/24/21 15:02	KDB	TAL SAC

## Client Sample ID: HOM6-SUB1

Lab Sample ID: 320-75270-38

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 13:24	K1S	TAL SAC

## Client Sample ID: HOM6D-SUB1

Lab Sample ID: 320-75270-39

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

## Client Sample ID: HOM6D-SUB1

Lab Sample ID: 320-75270-39

Date Collected: 06/15/21 15:00

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 84.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 13:51	K1S	TAL SAC

## Client Sample ID: HOM6-SUB2

Lab Sample ID: 320-75270-40

Date Collected: 06/15/21 15:10

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM6-SUB2

Lab Sample ID: 320-75270-40

Date Collected: 06/15/21 15:10

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.67 g	10.0 mL	501779	06/25/21 11:23	RAC	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			502196	06/27/21 14:00	K1S	TAL SAC

## Client Sample ID: KD3-SUB1

Lab Sample ID: 320-75270-41

Date Collected: 06/15/21 16:40

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

## Client Sample ID: KD3-SUB1

Lab Sample ID: 320-75270-41

Date Collected: 06/15/21 16:40

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.0 mL	502318	06/27/21 18:38	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			503629	07/01/21 20:23	RS1	TAL SAC

## Client Sample ID: KD3-SUB2

Lab Sample ID: 320-75270-42

Date Collected: 06/15/21 16:50

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

## Client Sample ID: KD3-SUB2

Lab Sample ID: 320-75270-42

Date Collected: 06/15/21 16:50

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.0 mL	502318	06/27/21 18:38	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			503629	07/01/21 20:32	RS1	TAL SAC

## Client Sample ID: HOM14-SUB1

Lab Sample ID: 320-75270-43

Date Collected: 06/15/21 18:05

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Client Sample ID: HOM14-SUB1

Lab Sample ID: 320-75270-43

Date Collected: 06/15/21 18:05

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 37.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	10.0 mL	502318	06/27/21 18:38	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			503296	07/01/21 04:34	K1S	TAL SAC

## Client Sample ID: HOM14-SUB2

Lab Sample ID: 320-75270-44

Date Collected: 06/15/21 18:25

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

## Client Sample ID: HOM14-SUB2

Lab Sample ID: 320-75270-44

Date Collected: 06/15/21 18:25

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 93.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.0 mL	502318	06/27/21 18:38	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			503296	07/01/21 04:43	K1S	TAL SAC

## Client Sample ID: HOM14D-SS

Lab Sample ID: 320-75270-45

Date Collected: 06/15/21 17:35

Matrix: Solid

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			501570	06/24/21 15:12	KDB	TAL SAC

## Client Sample ID: HOM14D-SS

Lab Sample ID: 320-75270-45

Date Collected: 06/15/21 17:35

Matrix: Solid

Date Received: 06/22/21 14:38

Percent Solids: 72.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.42 g	10.0 mL	502318	06/27/21 18:38	AM	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			503296	07/01/21 04:53	K1S	TAL SAC

### Laboratory References:

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

# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

## Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

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

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport DOT

Job ID: 320-75270-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

**Laboratory References:**

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



# Sample Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport DOT

Job ID: 320-75270-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-75270-1	HOM1-SS	Solid	06/17/21 09:45	06/22/21 14:38	
320-75270-2	HOM2-SS	Solid	06/17/21 11:19	06/22/21 14:38	
320-75270-3	HOM3-SS	Solid	06/17/21 09:50	06/22/21 14:38	
320-75270-4	HOM4-SS	Solid	06/14/21 18:45	06/22/21 14:38	
320-75270-5	HOM5-SS	Solid	06/15/21 13:25	06/22/21 14:38	
320-75270-6	HOM6-SS	Solid	06/15/21 14:38	06/22/21 14:38	
320-75270-7	HOM7-SS	Solid	06/17/21 09:58	06/22/21 14:38	
320-75270-8	HOM9-SS	Solid	06/17/21 11:30	06/22/21 14:38	
320-75270-9	HOM10-SS	Solid	06/17/21 10:15	06/22/21 14:38	
320-75270-10	HOM11-SS	Solid	06/14/21 12:10	06/22/21 14:38	
320-75270-11	HOM12-SS	Solid	06/17/21 11:37	06/22/21 14:38	
320-75270-12	HOM13-SS	Solid	06/17/21 10:23	06/22/21 14:38	
320-75270-13	HOM14-SS	Solid	06/15/21 17:45	06/22/21 14:38	
320-75270-14	HOM15-SS	Solid	06/17/21 11:45	06/22/21 14:38	
320-75270-15	HOM16-SS	Solid	06/17/21 10:44	06/22/21 14:38	
320-75270-16	HOM18-SS	Solid	06/17/21 11:55	06/22/21 14:38	
320-75270-17	HOM19-SS	Solid	06/17/21 13:00	06/22/21 14:38	
320-75270-18	FAA1-SS	Solid	06/15/21 11:50	06/22/21 14:38	
320-75270-19	KD1-SS	Solid	06/15/21 09:00	06/22/21 14:38	
320-75270-20	KD2-SS	Solid	06/14/21 17:00	06/22/21 14:38	
320-75270-21	KD3-SS	Solid	06/15/21 16:30	06/22/21 14:38	
320-75270-22	HOM7D-SS	Solid	06/17/21 09:58	06/22/21 14:38	
320-75270-23	HOM11D-SS	Solid	06/14/21 12:10	06/22/21 14:38	
320-75270-24	BL-SED	Solid	06/17/21 13:35	06/22/21 14:38	
320-75270-25	LL-SED	Solid	06/17/21 12:20	06/22/21 14:38	
320-75270-26	KD2-SUB1	Solid	06/14/21 17:25	06/22/21 14:38	
320-75270-27	KD2-SUB2	Solid	06/14/21 17:49	06/22/21 14:38	
320-75270-28	HOM11-SUB1	Solid	06/14/21 12:43	06/22/21 14:38	
320-75270-29	HOM11-SUB2	Solid	06/14/21 16:04	06/22/21 14:38	
320-75270-30	HOM4-SUB1	Solid	06/14/21 19:02	06/22/21 14:38	
320-75270-31	HOM4-SUB2	Solid	06/14/21 19:24	06/22/21 14:38	
320-75270-32	KD1-SUB1	Solid	06/15/21 09:42	06/22/21 14:38	
320-75270-33	KD1-SUB2	Solid	06/15/21 11:00	06/22/21 14:38	
320-75270-34	FAA1-SUB1	Solid	06/15/21 12:09	06/22/21 14:38	
320-75270-35	FAA1-SUB2	Solid	06/15/21 12:38	06/22/21 14:38	
320-75270-36	HOM5-SUB1	Solid	06/15/21 13:45	06/22/21 14:38	
320-75270-37	HOM5-SUB2	Solid	06/15/21 13:50	06/22/21 14:38	
320-75270-38	HOM6-SUB1	Solid	06/15/21 15:00	06/22/21 14:38	
320-75270-39	HOM6D-SUB1	Solid	06/15/21 15:00	06/22/21 14:38	
320-75270-40	HOM6-SUB2	Solid	06/15/21 15:10	06/22/21 14:38	
320-75270-41	KD3-SUB1	Solid	06/15/21 16:40	06/22/21 14:38	
320-75270-42	KD3-SUB2	Solid	06/15/21 16:50	06/22/21 14:38	
320-75270-43	HOM14-SUB1	Solid	06/15/21 18:05	06/22/21 14:38	
320-75270-44	HOM14-SUB2	Solid	06/15/21 18:25	06/22/21 14:38	
320-75270-45	HOM14D-SS	Solid	06/15/21 17:35	06/22/21 14:38	



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:  
 Normal  Rush  
 Please Specify

Quote No.: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

PFAS x 18 537.1

Total Number of Containers

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
HOM 1 - SS		09:45	6/17/21	X	 320-75270 Chain of Custody
HOM 2 - SS		11:19	6/17/21	X	
HOM 3 - SS		09:50	6/17/21	X	
HOM 4 - SS		18:45	6/14/21	X	
HOM 5 - SS		13:25	6/15/21	X	
HOM 6 - SS		14:38	6/15/21	X	
HOM 7 - SS		09:58	6/17/21	X	
HOM 9 - SS		11:30	6/17/21	X	
HOM 10 - SS		10:15	6/17/21	X	
HOM 11 - SS		12:10	6/14/21	X	

**Project Information**

Number: 106031  
 Name: Homer Airport DOT  
 Contact: Ashley Jaramillo  
 Ongoing Project? Yes  No   
 Sampler: APW, MED

**Sample Receipt**

Total No. of Containers: \_\_\_\_\_  
 COC Seals/Intact? Y/N/A  
 Received Good Cond./Cold Y  
 Temp: 4.2  
 Delivery Method: AK Air Cargo

**Notes:**

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>11:00</u> Date: <u>6/17/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: <u>[Signature]</u> Time: <u>11:30</u> Date: <u>6/17/21</u>	Received By: <u>[Signature]</u> Time: _____ Date: _____	Received By: <u>[Signature]</u> Time: _____ Date: _____

Time 1227



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

537.1

PFAS-X18

Soil Grab Sample

Turn Around Time:  
 Normal  Rush  
 Please Specify

Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
HOM 12 - SS		11:37	6/17/21	X	<div style="color: red; font-size: 2em;">→</div>
HOM 13 - SS		10:23	6/17/21	X	
HOM 14 - SS		17:45	6/15/21	X	
HOM 15 - SS		11:45	6/17/21	X	
HOM 16 - SS		10:44	6/17/21	X	
HOM 18 - SS		11:55	6/17/21	X	
HOM 19 - SS		13:00	6/17/21	X	
FAA 1 - SS		11:50	6/15/21	X	
KD 1 - SS		09:00	6/15/21	X	
KD 2 - SS		17:00	6/14/21	X	

**Project Information**

Number: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Ongoing Project? Yes  No   
 Sampler: \_\_\_\_\_

**Sample Receipt**

Total No. of Containers: \_\_\_\_\_  
 COC Seals/Intact? Y/N/NA Y  
 Received Good Cond./Cold Y  
 Temp: 4.2  
 Delivery Method: \_\_\_\_\_

**Notes:**

Q65

See

**Relinquished By: 1.**  
 Signature: Adam Wyborny  
 Printed Name: Adam Wyborny  
 Date: 6/21/21  
 Company: Shannon & Wilson, Inc.

**Relinquished By: 2.**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

**Relinquished By: 3.**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

**Received By: 1.**  
 Signature: [Signature]  
 Printed Name: [Name]  
 Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

**Received By: 2.**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

**Received By: 3.**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Q 1 wa 1050 506122121  
 11 Jun 1710 506122121



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

PFAS x 18 537.1	
Total Number of Containers	

Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
KD3-SS		16:30	6/15/21	X Soil Grab Sample
HOM 7D-SS		09:58	6/17/21	X
HOM 11D-SS		12:10	6/14/21	X
BL-SED		13:35	6/17/21	X Lake Sediment Sample
LL-SED		12:20	6/17/21	X
KD2-SUB1		17:25	6/14/21	X Soil Grab Sample
KD2-SUB2		17:49	6/14/21	X
HOM 11-SUB1		12:43	6/14/21	X
HOM 11-SUB2		16:04	6/14/21	X
HOM 4-SUB1		19:02	6/14/21	X

**Project Information**

Number: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Ongoing Project? Yes  No   
 Sampler: \_\_\_\_\_

**Sample Receipt**

Total No. of Containers: \_\_\_\_\_  
 COC Seals/Intact? Y/N/NA Y  
 Received Good Cond./Cold Y  
 Temp: 4.2  
 Delivery Method: \_\_\_\_\_

**Notes:**  
See

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Company: _____	Signature: _____ Printed Name: _____ Company: _____
Time: <u>11:00</u> Date: <u>6/21/21</u>	Time: _____ Date: _____	Time: _____ Date: _____
Received By: <u>1:50</u> Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Company: _____	Received By: <u>2.</u> Signature: _____ Printed Name: _____ Company: _____	Received By: <u>3.</u> Signature: _____ Printed Name: _____ Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

atime 1250 50 6/22/21



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:  Normal  Rush  
 Please Specify \_\_\_\_\_  
 Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Total Number of Containers	PFAS x 18 537.1

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
HOM 4 - SUB 2		19:24	6/14/21	X	Sail Grab Sample →
KD 1 - SUB 1		09:42	6/15/21	X	
KD 1 - SUB 2		11:00	6/15/21	X	
FAA 1 - SUB 1		12:09	6/15/21	X	
FAA 1 - SUB 2		12:38	6/15/21	X	
HOM 5 - SUB 1		13:45	6/15/21	X	
HOM 5 - SUB 2		13:50	6/15/21	X	
HOM 6 - SUB 1		15:00	6/15/21	X	
HOM 6 - SUB 2		15:00	6/15/21	X	
HOM 6 - SUB 2		15:10	6/15/21	X	

**Project Information**  
 Number: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Ongoing Project? Yes  No   
 Sampler: \_\_\_\_\_

**Sample Receipt**  
 Total No. of Containers: \_\_\_\_\_  
 COC Seals/Intact? Y/N/NA Y  
 Received Good Cond./Cold Y  
 Temp: 42  
 Delivery Method: \_\_\_\_\_

**Notes:**  
502

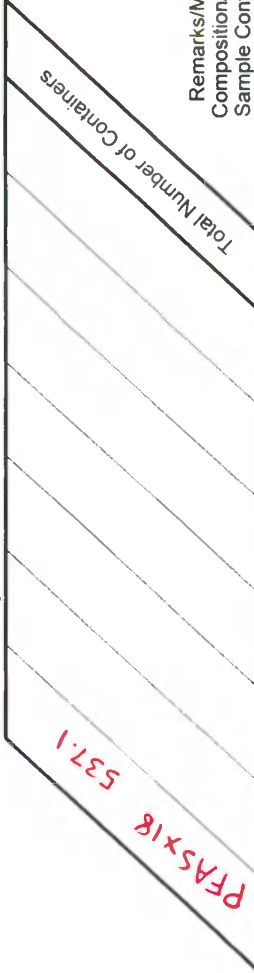
Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Adana Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u> Time: <u>11:00</u> Date: <u>6/11/21</u>	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____
Received By: 1. Signature: <u>[Signature]</u> Printed Name: <u>[Name]</u> Company: _____ Time: <u>11:30</u> Date: <u>[Date]</u>	Received By: 2. Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____	Received By: 3. Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)



Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
KD3 - SUB 1		16:40	6/15/21	X	1 Soil Grab Sample ↓
KD3 - SUB 2		16:50	6/15/21	X	
HOM 14 - SUB 1		18:05	6/15/21	X	
HOM 14 - SUB 2		18:25	6/15/21	X	

**Project Information**  
 Number: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Ongoing Project? Yes  No   
 Sampler: \_\_\_\_\_

**Sample Receipt**  
 Total No. of Containers: \_\_\_\_\_  
 COC Seats/Intact? Y/N/NA Y  
 Received Good Cond./Cold Y  
 Temp: 4.2  
 Delivery Method: \_\_\_\_\_

**Notes:**  
20  
52

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u> Time: <u>11:00</u> Date: <u>6/21/21</u>	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____
Received By: <u>[Signature]</u> Time: <u>6:00</u> Date: <u>6/21/21</u>	Received By: <u>[Signature]</u> Time: _____ Date: _____	Received By: <u>[Signature]</u> Time: _____ Date: _____

Extra sample ID: HOM 14D-SS, Date 6/15/21, Time 17:35 So 6/15/21



## Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-75270-1

**Login Number: 75270**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Her, David A**

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

**Laboratory Data Review Checklist**

Completed By:

Adam Wyborny, PE

Title:

Environmental Engineer

Date:

July 13, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins Environment Testing

Laboratory Report Number:

320-75270-1

Laboratory Report Date:

July 8, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

ADEC File Number:

2314.38.042

Hazard Identification Number:

27309

320-75270-1

Laboratory Report Date:

July 8, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

**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:

The DEC certified TestAmerica of West Sacramento, CA for the analysis of per- and polyfluorinated alkyl substances (PFAS) on February 11, 2021 by LCMSMS compliant with QSM Version 5.3 Table B-15. These reported analytes were included in the DEC’s Contaminated Sites Laboratory Approval 17-020.

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:

The samples were not transferred to a network laboratory.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

The sample *HOMI4D-SS* was submitted with this sample batch but erroneously omitted from the COC. The laboratory confirmed the sample with the project manager and logged it in per the date and time listed on the container.

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:



320-75270-1

Laboratory Report Date:

July 8, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The sample receipt form notes that the samples arrived in good condition and properly preserved.

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:

Several samples had minor discrepancies between the sample times listed on the containers and those shown on the COC. These time discrepancies were all less than 10 minutes and had no effect on holding time. The samples were logged in per the COC and the results were not affected.

Extra containers were noted for the sample *HOM11-SS* while *HOM11D-SS* was noted to be absent. These samples were identified as field duplicates and logged in per the COC.

e. Data quality or usability affected?

Comments:

The field duplicate samples *HOM11-SS* and *HOM11D-SS* were identified to the laboratory. See section 6.f for further assessment.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

320-75270-1

Laboratory Report Date:

July 8, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The laboratory applied the I-flag to the perfluorooctanesulfonic acid (PFOS) results of samples *HOM3-SS*, *HOM7-SS*, *HOM13-SS*, *HOM7D-SS*, *BL-SED*, *KD1-SUB2*, and the perfluorohexanesulfonic acid (PFHxS) result of sample *KD1-SS*. The I-flag indicates that the transition mass ratio for the affected analyte was outside of the established ratio limits. The case narrative states that the qualitative identification of the affected analytes has some degree of uncertainty, and the reported values may have some high bias. However, analyst judgment was used to positively identify the analyte. Due to this uncertainty the, noted analytes in the aforementioned samples are considered estimates, with no direction of bias, and have been flagged 'J' in the results table.

The recoveries of several isotope dilution analytes (IDAs) were below the laboratory's lower control limits for the samples *KD3-SS*, *KD3-SUB1*, *KD3-SUB2*, *HOM14-SUB1*, *HOM14-SUB2*, and *HOM14D-SS*. The laboratory notes that data quality is not typically considered affected if the signal-to-noise ratio is greater than 10:1, which was achieved for all IDA in this sample. See Section 6.d for further details.

The PFAS results for sample *HOM5-SS* were reported from the analysis of a diluted extract. The sample was diluted due to the high concentrations of target analytes in the undiluted extract. The dilution factor was applied to the internal standard area counts and these counts were within acceptable limits. Data quality and/or usability not affected.

The recoveries of PFOS and PFHxS were outside of laboratory control limits in the method EPA 537M matrix spike duplicate (MSD) sample associated with preparation batch 320-501777. The laboratory attributes these recovery failures to sample non-homogeneity. See Section 6.c for further details.

The recovery of 4,8-dioxa-3H-perfluoronanoic acid (ADONA) was outside of laboratory control limits in the method EPA 537M MSD sample associated with preparation batch 320-501779. The laboratory attributes these recovery failures to sample non-homogeneity. See Section 6.c for further details.

The recoveries of one or more PFAS were outside of laboratory control limits in the method EPA 537M MSD sample associated with preparation batch 320-502318. The laboratory attributes these recovery failures to matrix interference and/or sample non-homogeneity. See Section 6.c for further details.

The laboratory noted a light-yellow hue in the final extract for samples *KD3-SS*, *BL-SED*, *LL-SED*, and *KD1-SUB2*. Data quality and/or usability not affected.

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c. Were all corrective actions documented?

Yes  No  N/A  Comments:

No corrective actions were detailed in the case narrative.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Any data quality/usability effects are discussed in 4b above or in the remainder of this checklist.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

The data quality/usability is not affected.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected. Target PFAS were not detected in the method blank samples.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No samples are affected. Target PFAS were not detected in the method blank samples.

v. Data quality or usability affected?

Comments:

The data quality/usability is 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:

LCSs were reported for EPA method 537M. See MS/MSD discussion for assessment of method precision.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested with this work order.

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- 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:

- 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:

LCSDs were not reported with the preparation batches containing the project samples. See MS/MSD discussion for assessment of method precision.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Method accuracy was demonstrated to be within acceptable limits.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Qualification of the results was not required; see above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

MS/MSD samples were reported for EPA method 537M.

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested with this work order.

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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

PFOS and PFHxS were recovered above the laboratory’s upper control limits in the MSD sample associated with preparation batch 320-501777.  
ADONA was recovered above the laboratory’s upper control limit in the MSD sample associated with preparation batch 320-501779.

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The MS/MSD samples reported in preparation batch 320-501777 were spiked from the field sample *HOM13-SS*. However, the PFOS and PFHxS spikes added to the matrix were low relative to the native concentrations in the parent sample. The resulting uncertainty may render the recoveries unrepresentative of actual method performance.  
The MS/MSD samples reported in preparation batch 320-501779 were spiked from the field sample *HOM6-SUB2*. ADONA was not detected in the parent sample. The results are therefore unaffected by the elevated method recovery demonstrated by the MSD sample.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Qualification of the results was not required; see section 6.c.v above.

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vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

The recoveries of the IDAs 13C2 PFUnA, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in sample *KD3-SS*.

The recovery of the IDAs 13C2 PFHxA, C4 PFHpA, 13C4 PFOA, 13C2 PFDoA, and 13C4 PFOS were below the laboratory's lower control limits in the sample *KD3-SUB1*.

The recovery of the IDAs 13C2 PFHxA, 13C4 PFOA, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, 18O2 PFHxS, 13C4 PFOS, d3-NMeFOSAA and 13C3 HFPO-DA were below the laboratory's lower control limits in the sample *KD3-SUB2*.

The recovery of the IDAs 13C2 PFDoA, 13C2 PFTeDA, and d5-NEtFOSAA were below the laboratory's lower control limits in the sample *HOM14-SUB1*.

The recovery of the IDAs C4 PFHpA, 13C4 PFOA, 13C5 PFNA, 13C2 PFUnA, 18O2 PFHxS, 13C4 PFOS, d3-NMeFOSAA and 13C3 HFPO-DA were below the laboratory's lower control limits in the sample *HOM14-SUB2*.

The recovery of the IDAs 13C4 PFOA, 13C5 PFNA, 13C2 PFDA, 13C2 PFDoA, 13C4 PFOS, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in the sample *HOM14D-SS*.

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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:

The non-detect perfluoroundecanoic acid (PFUnA), N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA), and N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) results of the sample *KD3-SS* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA), perfluorododecanoic acid (PFDoA), and PFOS results of the sample *KD3-SUB1* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFHxA, PFOA, perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), PFUnA, PFDoA, perfluorotetradecanoic acid (PFTeA), PFOS, NMeFOSAA, and hexafluoropropylene oxide dimer (HFPO-DA) results of the sample *KD3-SUB2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFDoA, PFTeA, and NEtFOSAA results of the sample *HOM14-SUB1* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFHpA, PFOA, PFNA, PFUnA, perfluorohexanesulfonic acid (PFHxS), PFOS, NMeFOSAA, and HFPO-DA results of the sample *HOM14-SUB2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFOA, PFNA, PFDA, PFDoA, PFOS, NMeFOSAA, and NEtFOSAA results of the sample *HOM14D-SS* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

iv. Data quality or usability affected?

Comments:

The data quality is affected; see above.

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:

Only PFAS analysis via EPA method 537.1 was requested for this work order. PFAS are non-volatile compounds, so a trip blank is not required.



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- 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:

A trip blank was not required for these samples.

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

A trip blank was not required for these samples.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; a trip blank was not submitted with this work order.

- v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

f. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

The field duplicate pairs *HOM6-SUB1 / HOM6D-SUB1*, *HOM7-SS / HOM7D-SS*, *HOM11-SS / HOM11D-SS*, and *HOM14-SS / HOM14D-SS* were submitted with this work order.

- ii. Submitted blind to lab?

Yes  No  N/A  Comments:

The field duplicate samples *HOM11-SS* and *HOM11D-SS* were submitted with this sample batch. However due to a sample container labeling error, the laboratory was made aware that these are field duplicate samples.

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iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

The relative precision demonstrated between the detected results of the field duplicate samples met the recommended DQO of 50% for all analytes except for PFOS in field duplicate pair *HOM11-SS/HOM11D-SS*, and PFHxS in field duplicate pair *HOM14-SS/HOM14D-SS*. These analytes in the noted samples are considered estimates with no direction of bias and have been flagged 'J'.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

See above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples for this project were not collected with reusable equipment. There is therefore no practical potential for analyte contributions attributable to equipment-based sample cross-contamination. A field blank sample was analyzed which revealed no detections for target PFAS.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

An equipment blank was not submitted with this work order.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

The data quality/usability is 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:

See Section 4.b.

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-75272-1  
Client Project/Site: Homer Airport PFAS

For:  
Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Ashley Jaramillo



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Authorized for release by:  
7/6/2021 8:50:18 AM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

## Glossary

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

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

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**Job ID: 320-75272-1**

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**Laboratory: Eurofins TestAmerica, Sacramento**

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## Narrative

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### Receipt

The samples were received on 6/22/2021 2:38 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.4° C.

### LCMS

Method 537.1 DW: The following sample has several low surrogate recoveries. The sample has been re-extracted and re-analyzed with concurring results. Client was contacted and data is reported per request. . FB-2 (320-75272-5)

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

### Organic Prep

Method 537.1 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-501027.

Method 537.1 DW: The following sample DW-1 (320-75272-1) in preparation batch 320-501027 was observed to be orange in color with a thin layer of sediment at the bottom of the bottle prior to extraction.

Method 537.1 DW: The following sample DW-2 (320-75272-2), DW-102 (320-75272-3) and DW-3 (320-75272-4) in preparation batch 320-501027 was observed to be light yellow in color with a thin layer of sediment at the bottom of the bottle prior to extraction.

Method 537.1 DW: The following samples DW-1 (320-75272-1), DW-2 (320-75272-2), DW-102 (320-75272-3) and DW-3 (320-75272-4) in preparation batch 320-501027 was observed to be light yellow in color after extraction and final voluming.

Method 537.1 DW: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-502833.

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

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: DW-1**

**Lab Sample ID: 320-75272-1**

No Detections.

**Client Sample ID: DW-2**

**Lab Sample ID: 320-75272-2**

No Detections.

**Client Sample ID: DW-102**

**Lab Sample ID: 320-75272-3**

No Detections.

**Client Sample ID: DW-3**

**Lab Sample ID: 320-75272-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.52	J	1.9	0.47	ng/L	1			537.1 DW	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.4		1.9	0.47	ng/L	1			537.1 DW	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.76	J	1.9	0.47	ng/L	1			537.1 DW	Total/NA

**Client Sample ID: FB-2**

**Lab Sample ID: 320-75272-5**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: DW-1**

**Lab Sample ID: 320-75272-1**

**Date Collected: 06/18/21 11:05**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 13:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	102		70 - 130	06/23/21 13:59	06/24/21 13:55	1
13C2 PFDA	104		70 - 130	06/23/21 13:59	06/24/21 13:55	1
d5-NEtFOSAA	86		70 - 130	06/23/21 13:59	06/24/21 13:55	1
13C3 HFPO-DA	95		70 - 130	06/23/21 13:59	06/24/21 13:55	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: DW-2**

**Lab Sample ID: 320-75272-2**

**Date Collected: 06/18/21 12:10**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.48	ng/L		06/23/21 13:59	06/24/21 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		70 - 130	06/23/21 13:59	06/24/21 14:02	1
13C2 PFDA	101		70 - 130	06/23/21 13:59	06/24/21 14:02	1
d5-NEtFOSAA	85		70 - 130	06/23/21 13:59	06/24/21 14:02	1
13C3 HFPO-DA	90		70 - 130	06/23/21 13:59	06/24/21 14:02	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: DW-102**

**Lab Sample ID: 320-75272-3**

**Date Collected: 06/18/21 12:00**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		70 - 130	06/23/21 13:59	06/24/21 14:10	1
13C2 PFDA	100		70 - 130	06/23/21 13:59	06/24/21 14:10	1
d5-NEtFOSAA	87		70 - 130	06/23/21 13:59	06/24/21 14:10	1
13C3 HFPO-DA	87		70 - 130	06/23/21 13:59	06/24/21 14:10	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: DW-3**

**Lab Sample ID: 320-75272-4**

**Date Collected: 06/18/21 13:55**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.52</b>	<b>J</b>	1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>2.4</b>		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.76</b>	<b>J</b>	1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.47	ng/L		06/23/21 13:59	06/24/21 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		70 - 130	06/23/21 13:59	06/24/21 14:18	1
13C2 PFDA	102		70 - 130	06/23/21 13:59	06/24/21 14:18	1
d5-NEtFOSAA	95		70 - 130	06/23/21 13:59	06/24/21 14:18	1
13C3 HFPO-DA	93		70 - 130	06/23/21 13:59	06/24/21 14:18	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Client Sample ID: FB-2**

**Lab Sample ID: 320-75272-5**

**Date Collected: 06/18/21 13:15**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.46	ng/L		06/23/21 13:59	06/25/21 10:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	3	S1-	70 - 130	06/23/21 13:59	06/25/21 10:50	1
13C2 PFDA	25	S1-	70 - 130	06/23/21 13:59	06/25/21 10:50	1
d5-NEtFOSAA	26	S1-	70 - 130	06/23/21 13:59	06/25/21 10:50	1
13C3 HFPO-DA	3	S1-	70 - 130	06/23/21 13:59	06/25/21 10:50	1

# Surrogate Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

**Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxA	PFDA	d5NEFOS	HFPODA
		(70-130)	(70-130)	(70-130)	(70-130)
320-75272-1	DW-1	102	104	86	95
320-75272-2	DW-2	93	101	85	90
320-75272-3	DW-102	90	100	87	87
320-75272-4	DW-3	99	102	95	93
320-75272-5	FB-2	3 S1-	25 S1-	26 S1-	3 S1-
LLCS 320-501027/2-A	Lab Control Sample	102	102	101	97
LLCSD 320-501027/3-A	Lab Control Sample Dup	100	100	96	96
MB 320-501027/1-A	Method Blank	110	111	103	104

### Surrogate Legend

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

d5NEFOS = d5-NEtFOSAA

HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS)

**Lab Sample ID: MB 320-501027/1-A**  
**Matrix: Water**  
**Analysis Batch: 501397**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501027**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.50	ng/L		06/23/21 13:59	06/24/21 13:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	110		70 - 130	06/23/21 13:59	06/24/21 13:47	1
13C2 PFDA	111		70 - 130	06/23/21 13:59	06/24/21 13:47	1
d5-NEtFOSAA	103		70 - 130	06/23/21 13:59	06/24/21 13:47	1
13C3 HFPO-DA	104		70 - 130	06/23/21 13:59	06/24/21 13:47	1

**Lab Sample ID: LLCS 320-501027/2-A**  
**Matrix: Water**  
**Analysis Batch: 501397**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501027**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid (PFHxA)	4.00	4.17		ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	4.00	4.33		ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	4.00	4.30		ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	4.00	3.98		ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	4.00	4.08		ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	4.00	3.91		ng/L		98	50 - 150
Perfluorododecanoic acid (PFDoA)	4.00	4.16		ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTriA)	4.00	4.02		ng/L		101	50 - 150
Perfluorotetradecanoic acid (PFTeA)	4.00	3.68		ng/L		92	50 - 150
Perfluorobutanesulfonic acid (PFBS)	3.54	3.22		ng/L		91	50 - 150

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LLCS 320-501027/2-A**  
**Matrix: Water**  
**Analysis Batch: 501397**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501027**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS)	3.64	3.42		ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	3.71	3.34		ng/L		90	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.00	3.56		ng/L		89	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.00	3.73		ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	3.73	3.23		ng/L		87	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PFHexafluoropropylene Oxide Dimer Acid (HFPO-DA)	3.77	3.08		ng/L		82	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	4.00	3.95		ng/L		99	50 - 150
	3.77	4.11		ng/L		109	50 - 150

Surrogate	LLCS %Recovery	LLCS Qualifier	LLCS Limits
13C2 PFHxA	102		70 - 130
13C2 PFDA	102		70 - 130
d5-NEtFOSAA	101		70 - 130
13C3 HFPO-DA	97		70 - 130

**Lab Sample ID: LLCSD 320-501027/3-A**  
**Matrix: Water**  
**Analysis Batch: 501397**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501027**

Analyte	Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	4.00	4.04		ng/L		101	50 - 150	3	50
Perfluoroheptanoic acid (PFHpA)	4.00	4.17		ng/L		104	50 - 150	4	50
Perfluorooctanoic acid (PFOA)	4.00	4.32		ng/L		108	50 - 150	0.4	50
Perfluorononanoic acid (PFNA)	4.00	3.83		ng/L		96	50 - 150	4	50
Perfluorodecanoic acid (PFDA)	4.00	3.96		ng/L		99	50 - 150	3	50
Perfluoroundecanoic acid (PFUnA)	4.00	3.74		ng/L		93	50 - 150	5	50
Perfluorododecanoic acid (PFDoA)	4.00	3.89		ng/L		97	50 - 150	7	50
Perfluorotridecanoic acid (PFTriA)	4.00	3.80		ng/L		95	50 - 150	6	50
Perfluorotetradecanoic acid (PFTeA)	4.00	3.80		ng/L		95	50 - 150	3	50
Perfluorobutanesulfonic acid (PFBS)	3.54	2.87		ng/L		81	50 - 150	11	50
Perfluorohexanesulfonic acid (PFHxS)	3.64	3.24		ng/L		89	50 - 150	6	50
Perfluorooctanesulfonic acid (PFOS)	3.71	3.30		ng/L		89	50 - 150	1	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.00	3.64		ng/L		91	50 - 150	2	50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.00	3.40		ng/L		85	50 - 150	9	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3O)	3.73	3.09		ng/L		83	50 - 150	4	50

Eurofins TestAmerica, Sacramento



# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Method: 537.1 DW - Perfluorinated Alkyl Acids (LC/MS) (Continued)

**Lab Sample ID: LLCSD 320-501027/3-A**  
**Matrix: Water**  
**Analysis Batch: 501397**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501027**

Analyte	Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF)	3.77	3.12		ng/L		83	50 - 150	1	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	4.00	3.93		ng/L		98	50 - 150	0.5	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	3.77	3.95		ng/L		105	50 - 150	4	50

Surrogate	LLCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	100		70 - 130
13C2 PFDA	100		70 - 130
d5-NEtFOSAA	96		70 - 130
13C3 HFPO-DA	96		70 - 130

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## LCMS

### Prep Batch: 501027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75272-1	DW-1	Total/NA	Water	537.1 DW	
320-75272-2	DW-2	Total/NA	Water	537.1 DW	
320-75272-3	DW-102	Total/NA	Water	537.1 DW	
320-75272-4	DW-3	Total/NA	Water	537.1 DW	
320-75272-5	FB-2	Total/NA	Water	537.1 DW	
MB 320-501027/1-A	Method Blank	Total/NA	Water	537.1 DW	
LLCS 320-501027/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCSD 320-501027/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	

### Analysis Batch: 501397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75272-1	DW-1	Total/NA	Water	537.1 DW	501027
320-75272-2	DW-2	Total/NA	Water	537.1 DW	501027
320-75272-3	DW-102	Total/NA	Water	537.1 DW	501027
320-75272-4	DW-3	Total/NA	Water	537.1 DW	501027
MB 320-501027/1-A	Method Blank	Total/NA	Water	537.1 DW	501027
LLCS 320-501027/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	501027
LLCSD 320-501027/3-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	501027

### Analysis Batch: 501818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75272-5	FB-2	Total/NA	Water	537.1 DW	501027

# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Client Sample ID: DW-1

Date Collected: 06/18/21 11:05

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75272-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			267.5 mL	1.0 mL	501027	06/23/21 13:59	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			501397	06/24/21 13:55	D1R	TAL SAC

## Client Sample ID: DW-2

Date Collected: 06/18/21 12:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75272-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			261.5 mL	1.0 mL	501027	06/23/21 13:59	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			501397	06/24/21 14:02	D1R	TAL SAC

## Client Sample ID: DW-102

Date Collected: 06/18/21 12:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75272-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			267 mL	1.0 mL	501027	06/23/21 13:59	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			501397	06/24/21 14:10	D1R	TAL SAC

## Client Sample ID: DW-3

Date Collected: 06/18/21 13:55

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75272-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			266.8 mL	1.0 mL	501027	06/23/21 13:59	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			501397	06/24/21 14:18	D1R	TAL SAC

## Client Sample ID: FB-2

Date Collected: 06/18/21 13:15

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75272-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW			274.4 mL	1.0 mL	501027	06/23/21 13:59	EH	TAL SAC
Total/NA	Analysis	537.1 DW		1			501818	06/25/21 10:50	D1R	TAL SAC

### Laboratory References:

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

# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

## Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-29-22
Hawaii	State	<cert No.>	01-29-22
Illinois	NELAP	200060	03-18-22
Kansas	NELAP	E-10375	10-31-21
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22
Nevada	State	CA000442021-2	07-31-21
New Hampshire	NELAP	2997	04-18-22
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-22
Oregon	NELAP	4040	01-30-23
Texas	NELAP	T104704399-19-13	05-31-22
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442021-12	03-01-22
Virginia	NELAP	460278	03-14-22
Washington	State	C581	05-05-22
West Virginia (DW)	State	9930C	12-31-21
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

Method	Method Description	Protocol	Laboratory
537.1 DW	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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



# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75272-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-75272-1	DW-1	Water	06/18/21 11:05	06/22/21 14:38	
320-75272-2	DW-2	Water	06/18/21 12:10	06/22/21 14:38	
320-75272-3	DW-102	Water	06/18/21 12:00	06/22/21 14:38	
320-75272-4	DW-3	Water	06/18/21 13:55	06/22/21 14:38	
320-75272-5	FB-2	Water	06/18/21 13:15	06/22/21 14:38	

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# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:  
 Normal  Rush  
 Please Specify

Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Sample Identity	Lab No.	Time	Date Sampled	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
DW-1		11:05	6/18/21	X	Water Grab Sample →
DW-2		12:10		X	
DW-102		12:00		X	
DW-3		13:55		X	
FB-2		13:15		X	



Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: <u>106031</u> Name: <u>Homer Airport PFAS</u> Contact: <u>Ashley Jaramillo</u> Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Sampler: <u>APW, MED</u>	Total No. of Containers: <u>10</u> COC Seals/Intact? Y/N/NA: <u>Y</u> Received Good Cond /Cold: <u>Y</u> Temp: <u>5-11</u> Delivery Method: <u>AK Air Cargo</u>	Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u> Time: <u>11:00</u> Date: <u>6/21/21</u>	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____
Notes: <u>DW samples are Trizma preserved</u>		Received By: <u>[Signature]</u> Printed Name: <u>David</u> Company: _____ Time: <u>6:25</u> Date: _____	Received By: <u>[Signature]</u> Printed Name: <u>David</u> Company: _____ Time: _____ Date: _____	Received By: <u>[Signature]</u> Printed Name: _____ Company: _____ Time: _____ Date: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Observer: unpreserved 50 6/22/21

5-40c No.



## Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-75272-1

**Login Number: 75272**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Her, David A**

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



**Laboratory Data Review Checklist**

Completed By:

Adam Wyborny, PE

Title:

Environmental Engineer

Date:

July 6, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins Environment Testing

Laboratory Report Number:

320-75272-1

Laboratory Report Date:

July 6, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

ADEC File Number:

2314.38.042

Hazard Identification Number:

27309

320-75272-1

Laboratory Report Date:

July 6, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

**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:

The DEC certified TestAmerica of West Sacramento, CA for the analysis of per- and polyfluorinated alkyl substances (PFAS) on February 11, 2021 by LCMSMS compliant with QSM Version 5.3 Table B-15. These reported analytes were included in the DEC’s Contaminated Sites Laboratory Approval 17-020.

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:

The samples were not transferred to a network laboratory.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The sample receipt form notes that the samples arrived in good condition and properly preserved.

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 were identified by the laboratory.

e. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

#### 4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The field blank sample *FB-2* exhibited low recovery for several isotope dilution analytes (IDA). The laboratory re-extracted the sample and observed concurring results.

Insufficient sample volume was available to perform a matrix spike (MS) and MS duplicate (MSD) via method EPA 537.1 in conjunction with preparation batches 320-501027 and 320-502833.

The sample *DW-1* was observed to have an orange hue and a thin layer of sediment at the bottom of the bottle prior to extraction. Similarly, the samples *DW-2*, *DW-102*, and *DW-3* were observed to have a light-yellow hue and a thin layer of sediment prior to extraction.

The extract for samples *DW-1*, *DW-2*, *DW-102*, and *DW-3* was observed to have a light-yellow hue after final voluming.

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c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory re-extracted and re-analyzed the field blank sample *FB-2* following the IDA recovery failures. The case narratives states that the results between these two runs were consistent.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify an effect on data quality/usability.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soil samples were not submitted with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

The data quality/usability is not affected.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected. Target analytes were not detected in the method blank sample.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The samples for this submittal were not affected by laboratory equipment contamination.

v. Data quality or usability affected?

Comments:

The data quality/usability is 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:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested with this work order.

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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:

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Method accuracy and precision were demonstrated to be within acceptable limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Qualification of the results was not required; see section 6.b.v above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

The recoveries of all IDA in the field blank sample *FB-2* were below the laboratory's lower control limits.

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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:

Target PFAS were not detected in the field blank sample *FB-2* and the non-detect results were confirmed through re-analysis. The low IDA recovery in this sample may imply issues with the matrix or analytical method, but the corresponding field samples and laboratory QC samples all exhibited passing IDA recovery.

iv. Data quality or usability affected?

Comments:

The field blank sample *FB-2* was collected as a field QC sample intended to check for possible analyte contributions attributable to the ambient conditions. The results of the field blank are not used for reporting purposes.

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:

Only PFAS analysis via EPA method 537.1 was requested for this work order. PFAS are non-volatile compounds, so a trip blank is not required.

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:

A trip blank was not required for these samples.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

A trip blank was not required for these samples.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; a trip blank was not submitted with this work order.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.



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f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

The field duplicate samples *DW-2* and *DW-102* were submitted with this sample batch.

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  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

Target PFAS were not detected in the field duplicate samples so the relative precision could not be assessed.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The data quality/usability is not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples for this project were not collected with reusable equipment. There is therefore no practical potential for analyte contributions attributable to equipment-based sample cross-contamination.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

An equipment blank was not submitted with this work order.

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ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

No additional data flags/qualifiers are required.

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-75273-1  
Client Project/Site: Homer Airport PFAS

For:  
Shannon & Wilson, Inc  
2355 Hill Rd.  
Fairbanks, Alaska 99709-5244

Attn: Ashley Jaramillo



---

Authorized for release by:  
6/30/2021 11:01:26 AM

David Alltucker, Project Manager I  
(916)374-4383  
[David.Alltucker@Eurofinset.com](mailto:David.Alltucker@Eurofinset.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

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## Job ID: 320-75273-1

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### Laboratory: Eurofins TestAmerica, Sacramento

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#### Narrative

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#### Receipt

The samples were received on 6/22/2021 2:38 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.4° C.

#### Receipt Exceptions

The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Received 2 extra samples not listed on COC, sample 15 & 16. Sample 15, ID: FB, Date 6/17 & time: 1250.

Sample, ID:GAC System, date 6/18 & time 1250. FB (320-75273-15) and GAC System (320-75273-16)

#### LCMS

Method EPA 537(Mod): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: KD3-GW (320-75273-2), HOM6-GW (320-75273-5), HOM-SW-2 (320-75273-9) and HOM-SW-3 (320-75273-10). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method EPA 537(Mod): Results for samples HOM5-GW (320-75273-3), HOM5D-GW (320-75273-4) and HOM-SW-2 (320-75273-9) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

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

#### Organic Prep

Method 3535: The following samples were observed to be brown and cloudy prior to extraction: HOM14-GW (320-75273-1), KD3-GW (320-75273-2), HOM5-GW (320-75273-3), HOM5D-GW (320-75273-4), HOM6-GW (320-75273-5), FAA-MW-1 (320-75273-6), FAA-MW-2 (320-75273-7), HOM-SW-1 (320-75273-8), HOM-SW-2 (320-75273-9), HOM-SW-3 (320-75273-10), HOM-SW-4 (320-75273-11), LL-SW (320-75273-12), HOM-SW-5 (320-75273-13) and BL-SW (320-75273-14).

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-501170.

Method 3535: The following samples were observed to be yellow at final volume: HOM6-GW (320-75273-5), HOM-SW-1 (320-75273-8), HOM-SW-2 (320-75273-9), HOM-SW-3 (320-75273-10), HOM-SW-4 (320-75273-11), LL-SW (320-75273-12) and HOM-SW-5 (320-75273-13).

Method 3535: During the solid phase extraction process, the following samples contain non-settable particulates which clogged the solid phase extraction column: KD3-GW (320-75273-2), HOM-SW-3 (320-75273-10) and BL-SW (320-75273-14).

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-501203.

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

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Client Sample ID: HOM14-GW

## Lab Sample ID: 320-75273-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.0	J	1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.68	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		1.9	0.53	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: KD3-GW

## Lab Sample ID: 320-75273-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.6	J	2.1	0.60	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.43	J	2.1	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	2.1	0.59	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.0	J	2.1	0.56	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM5-GW

## Lab Sample ID: 320-75273-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	64		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	18		1.9	0.82	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	150		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	780		19	5.6	ng/L	10		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	460		19	1.9	ng/L	10		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM5D-GW

## Lab Sample ID: 320-75273-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	63		2.0	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	18		2.0	0.83	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	140		2.0	0.56	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		2.0	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	660		20	5.7	ng/L	10		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	470		20	2.0	ng/L	10		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM6-GW

## Lab Sample ID: 320-75273-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	8.4		2.0	0.59	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.9		2.0	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		2.0	0.87	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.57	J	2.0	0.28	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.5		2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.4		2.0	0.55	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: FAA-MW-1

## Lab Sample ID: 320-75273-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.84	J	1.8	0.53	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.77	J	1.8	0.52	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Client Sample ID: FAA-MW-2

## Lab Sample ID: 320-75273-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.4		2.1	0.60	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.43	J	2.1	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.68	J	2.1	0.59	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM-SW-1

## Lab Sample ID: 320-75273-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	4.3		2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.4		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		2.0	0.86	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.46	J	2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.3		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	17		2.0	0.57	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.5		2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM-SW-2

## Lab Sample ID: 320-75273-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	380		2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	170		2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	240		2.0	0.85	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	46		2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	7.9		2.0	0.31	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.1	J	2.0	1.1	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	58		2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	570		20	5.7	ng/L	10		EPA 537(Mod)	Total/NA
- DL									
Perfluorooctanesulfonic acid (PFOS) - DL	1200		20	5.4	ng/L	10		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM-SW-3

## Lab Sample ID: 320-75273-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	100		1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	56		1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	25		1.9	0.81	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	10		1.9	0.26	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	1.3	J	1.9	0.30	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	16		1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	69		1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	100		1.9	0.52	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM-SW-4

## Lab Sample ID: 320-75273-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.94	J	1.9	0.55	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.40	J	1.9	0.24	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.67	J	1.9	0.19	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.3	J	1.9	0.54	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: LL-SW

## Lab Sample ID: 320-75273-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	1.0	J	2.1	0.62	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento



# Detection Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Client Sample ID: LL-SW (Continued)

Lab Sample ID: 320-75273-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	1.5	J	2.1	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	1.2	J	2.1	0.91	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.46	J	2.1	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.33	J	2.1	0.21	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	2.1	0.61	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: HOM-SW-5

Lab Sample ID: 320-75273-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	140		2.2	0.62	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	55		2.2	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	140		2.2	0.91	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	17		2.2	0.29	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	46		2.2	0.33	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.5	J	2.2	1.2	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	1.2	J	2.2	0.59	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	25		2.2	0.22	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	140		2.2	0.61	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	240		2.2	0.58	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: BL-SW

Lab Sample ID: 320-75273-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	2.8		2.0	0.59	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.25	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	2.6		2.0	0.86	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.79	J	2.0	0.27	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J	2.0	0.20	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.6		2.0	0.58	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	20		2.0	0.54	ng/L	1		EPA 537(Mod)	Total/NA

## Client Sample ID: FB

Lab Sample ID: 320-75273-15

No Detections.

## Client Sample ID: GAC System

Lab Sample ID: 320-75273-16

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM14-GW**

**Lab Sample ID: 320-75273-1**

Date Collected: 06/16/21 10:00

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>1.0</b>	<b>J</b>	1.9	0.54	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.79	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.68	ng/L		06/23/21 20:57	06/25/21 13:33	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.68</b>	<b>J</b>	1.9	0.19	ng/L		06/23/21 20:57	06/25/21 13:33	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.6</b>		1.9	0.53	ng/L		06/23/21 20:57	06/25/21 13:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.50	ng/L		06/23/21 20:57	06/25/21 13:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		06/23/21 20:57	06/25/21 13:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		06/23/21 20:57	06/25/21 13:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.22	ng/L		06/23/21 20:57	06/25/21 13:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.7	1.4	ng/L		06/23/21 20:57	06/25/21 13:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	ng/L		06/23/21 20:57	06/25/21 13:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.37	ng/L		06/23/21 20:57	06/25/21 13:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C4 PFHpA	94		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C4 PFOA	96		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C5 PFNA	96		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C2 PFDA	85		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C2 PFUnA	72		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C2 PFDoA	59		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C2 PFTeDA	60		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C3 PFBS	93		50 - 150	06/23/21 20:57	06/25/21 13:33	1
18O2 PFHxS	104		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 13:33	1
d3-NMeFOSAA	70		50 - 150	06/23/21 20:57	06/25/21 13:33	1
d5-NEtFOSAA	67		50 - 150	06/23/21 20:57	06/25/21 13:33	1
13C3 HFPO-DA	76		50 - 150	06/23/21 20:57	06/25/21 13:33	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: KD3-GW**  
**Date Collected: 06/16/21 11:10**  
**Date Received: 06/22/21 14:38**

**Lab Sample ID: 320-75273-2**  
**Matrix: Water**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.6	J	2.1	0.60	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluoroheptanoic acid (PFHpA)	0.43	J	2.1	0.26	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorooctanoic acid (PFOA)	ND		2.1	0.89	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorononanoic acid (PFNA)	ND		2.1	0.28	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorodecanoic acid (PFDA)	ND		2.1	0.32	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluoroundecanoic acid (PFUnA)	ND		2.1	1.1	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorododecanoic acid (PFDoA)	ND		2.1	0.57	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorotridecanoic acid (PFTriA)	ND		2.1	1.4	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.1	0.76	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.1	0.21	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	2.1	0.59	ng/L		06/23/21 20:57	06/25/21 13:42	1
Perfluorooctanesulfonic acid (PFOS)	1.0	J	2.1	0.56	ng/L		06/23/21 20:57	06/25/21 13:42	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	ND		5.2	1.2	ng/L		06/23/21 20:57	06/25/21 13:42	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	ND		5.2	1.4	ng/L		06/23/21 20:57	06/25/21 13:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.1	0.25	ng/L		06/23/21 20:57	06/25/21 13:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.2	1.6	ng/L		06/23/21 20:57	06/25/21 13:42	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	ND		2.1	0.33	ng/L		06/23/21 20:57	06/25/21 13:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.1	0.42	ng/L		06/23/21 20:57	06/25/21 13:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	58		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C4 PFHpA	69		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C4 PFOA	64		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C5 PFNA	59		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C2 PFDA	51		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C2 PFUnA	39	*5-	50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C2 PFDoA	36	*5-	50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C2 PFTeDA	39	*5-	50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C3 PFBS	58		50 - 150	06/23/21 20:57	06/25/21 13:42	1
18O2 PFHxS	58		50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C4 PFOS	62		50 - 150	06/23/21 20:57	06/25/21 13:42	1
d3-NMeFOSAA	38	*5-	50 - 150	06/23/21 20:57	06/25/21 13:42	1
d5-NEtFOSAA	34	*5-	50 - 150	06/23/21 20:57	06/25/21 13:42	1
13C3 HFPO-DA	51		50 - 150	06/23/21 20:57	06/25/21 13:42	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM5-GW**

**Lab Sample ID: 320-75273-3**

Date Collected: 06/16/21 12:30

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>64</b>		1.9	0.24	ng/L		06/23/21 20:57	06/25/21 13:52	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>18</b>		1.9	0.82	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		06/23/21 20:57	06/25/21 13:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.71	ng/L		06/23/21 20:57	06/25/21 13:52	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>150</b>		1.9	0.55	ng/L		06/23/21 20:57	06/25/21 13:52	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.3</b>		1.9	0.52	ng/L		06/23/21 20:57	06/25/21 13:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.2	ng/L		06/23/21 20:57	06/25/21 13:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.3	ng/L		06/23/21 20:57	06/25/21 13:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		06/23/21 20:57	06/25/21 13:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.4	ng/L		06/23/21 20:57	06/25/21 13:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		06/23/21 20:57	06/25/21 13:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.39	ng/L		06/23/21 20:57	06/25/21 13:52	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFHpA	88		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C4 PFOA	100		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C5 PFNA	88		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C2 PFDA	86		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C2 PFUnA	66		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C2 PFDoA	76		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C2 PFTeDA	87		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C3 PFBS	86		50 - 150				06/23/21 20:57	06/25/21 13:52	1
18O2 PFHxS	96		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C4 PFOS	98		50 - 150				06/23/21 20:57	06/25/21 13:52	1
d3-NMeFOSAA	53		50 - 150				06/23/21 20:57	06/25/21 13:52	1
d5-NEtFOSAA	65		50 - 150				06/23/21 20:57	06/25/21 13:52	1
13C3 HFPO-DA	76		50 - 150				06/23/21 20:57	06/25/21 13:52	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>780</b>		19	5.6	ng/L		06/23/21 20:57	06/26/21 15:51	10
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>460</b>		19	1.9	ng/L		06/23/21 20:57	06/26/21 15:51	10
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	103		50 - 150				06/23/21 20:57	06/26/21 15:51	10
13C3 PFBS	105		50 - 150				06/23/21 20:57	06/26/21 15:51	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM5D-GW**

**Lab Sample ID: 320-75273-4**

Date Collected: 06/16/21 12:20

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>63</b>		2.0	0.24	ng/L		06/23/21 20:57	06/25/21 14:01	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>18</b>		2.0	0.83	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.26	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 14:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.71	ng/L		06/23/21 20:57	06/25/21 14:01	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>140</b>		2.0	0.56	ng/L		06/23/21 20:57	06/25/21 14:01	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.1</b>		2.0	0.53	ng/L		06/23/21 20:57	06/25/21 14:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.9	1.2	ng/L		06/23/21 20:57	06/25/21 14:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.9	1.3	ng/L		06/23/21 20:57	06/25/21 14:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.23	ng/L		06/23/21 20:57	06/25/21 14:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.9	1.5	ng/L		06/23/21 20:57	06/25/21 14:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.31	ng/L		06/23/21 20:57	06/25/21 14:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.39	ng/L		06/23/21 20:57	06/25/21 14:01	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFHpA	90		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C4 PFOA	89		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C5 PFNA	83		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C2 PFDA	77		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C2 PFUnA	62		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C2 PFDoA	74		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C2 PFTeDA	75		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C3 PFBS	84		50 - 150				06/23/21 20:57	06/25/21 14:01	1
18O2 PFHxS	99		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C4 PFOS	83		50 - 150				06/23/21 20:57	06/25/21 14:01	1
d3-NMeFOSAA	59		50 - 150				06/23/21 20:57	06/25/21 14:01	1
d5-NEtFOSAA	60		50 - 150				06/23/21 20:57	06/25/21 14:01	1
13C3 HFPO-DA	76		50 - 150				06/23/21 20:57	06/25/21 14:01	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>660</b>		20	5.7	ng/L		06/23/21 20:57	06/26/21 16:00	10
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>470</b>		20	2.0	ng/L		06/23/21 20:57	06/26/21 16:00	10
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	90		50 - 150				06/23/21 20:57	06/26/21 16:00	10
13C3 PFBS	82		50 - 150				06/23/21 20:57	06/26/21 16:00	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM6-GW**

**Lab Sample ID: 320-75273-5**

Date Collected: 06/16/21 14:10

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	8.4		2.0	0.59	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluoroheptanoic acid (PFHpA)	4.9		2.0	0.26	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorooctanoic acid (PFOA)	2.3		2.0	0.87	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorononanoic acid (PFNA)	0.57	J	2.0	0.28	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.32	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.56	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.75	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J	2.0	0.20	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorohexanesulfonic acid (PFHxS)	5.5		2.0	0.58	ng/L		06/23/21 20:57	06/25/21 14:10	1
Perfluorooctanesulfonic acid (PFOS)	5.4		2.0	0.55	ng/L		06/23/21 20:57	06/25/21 14:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.1	1.2	ng/L		06/23/21 20:57	06/25/21 14:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.1	1.3	ng/L		06/23/21 20:57	06/25/21 14:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.25	ng/L		06/23/21 20:57	06/25/21 14:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.1	1.5	ng/L		06/23/21 20:57	06/25/21 14:10	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.33	ng/L		06/23/21 20:57	06/25/21 14:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.41	ng/L		06/23/21 20:57	06/25/21 14:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C4 PFHpA	88		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C4 PFOA	85		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C5 PFNA	88		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C2 PFDA	89		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C2 PFUnA	73		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C2 PFDoA	63		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C2 PFTeDA	28	*5-	50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C3 PFBS	93		50 - 150	06/23/21 20:57	06/25/21 14:10	1
18O2 PFHxS	97		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 14:10	1
d3-NMeFOSAA	71		50 - 150	06/23/21 20:57	06/25/21 14:10	1
d5-NEtFOSAA	61		50 - 150	06/23/21 20:57	06/25/21 14:10	1
13C3 HFPO-DA	81		50 - 150	06/23/21 20:57	06/25/21 14:10	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: FAA-MW-1**

**Lab Sample ID: 320-75273-6**

Date Collected: 06/16/21 16:30

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.84</b>	<b>J</b>	1.8	0.53	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.23	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.77	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.67	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		06/23/21 20:57	06/25/21 14:19	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.77</b>	<b>J</b>	1.8	0.52	ng/L		06/23/21 20:57	06/25/21 14:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.49	ng/L		06/23/21 20:57	06/25/21 14:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		06/23/21 20:57	06/25/21 14:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		06/23/21 20:57	06/25/21 14:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.8	0.22	ng/L		06/23/21 20:57	06/25/21 14:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.6	1.4	ng/L		06/23/21 20:57	06/25/21 14:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.8	0.29	ng/L		06/23/21 20:57	06/25/21 14:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.8	0.36	ng/L		06/23/21 20:57	06/25/21 14:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	89		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C4 PFHpA	91		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C4 PFOA	94		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C5 PFNA	90		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C2 PFDA	84		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C2 PFUnA	84		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C2 PFDoA	75		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C2 PFTeDA	85		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C3 PFBS	97		50 - 150	06/23/21 20:57	06/25/21 14:19	1
18O2 PFHxS	108		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C4 PFOS	94		50 - 150	06/23/21 20:57	06/25/21 14:19	1
d3-NMeFOSAA	61		50 - 150	06/23/21 20:57	06/25/21 14:19	1
d5-NEtFOSAA	64		50 - 150	06/23/21 20:57	06/25/21 14:19	1
13C3 HFPO-DA	83		50 - 150	06/23/21 20:57	06/25/21 14:19	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: FAA-MW-2**

**Lab Sample ID: 320-75273-7**

Date Collected: 06/16/21 17:25

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.4		2.1	0.60	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluoroheptanoic acid (PFHpA)	0.43	J	2.1	0.26	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorooctanoic acid (PFOA)	ND		2.1	0.88	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorononanoic acid (PFNA)	ND		2.1	0.28	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorodecanoic acid (PFDA)	ND		2.1	0.32	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluoroundecanoic acid (PFUnA)	ND		2.1	1.1	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorododecanoic acid (PFDoA)	ND		2.1	0.57	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorotridecanoic acid (PFTriA)	ND		2.1	1.3	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.1	0.76	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.1	0.21	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.68	J	2.1	0.59	ng/L		06/23/21 20:57	06/25/21 14:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.1	0.56	ng/L		06/23/21 20:57	06/25/21 14:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.2	1.2	ng/L		06/23/21 20:57	06/25/21 14:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.2	1.3	ng/L		06/23/21 20:57	06/25/21 14:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.1	0.25	ng/L		06/23/21 20:57	06/25/21 14:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.1	1.6	ng/L		06/23/21 20:57	06/25/21 14:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.1	0.33	ng/L		06/23/21 20:57	06/25/21 14:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.1	0.41	ng/L		06/23/21 20:57	06/25/21 14:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C4 PFHpA	99		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C4 PFOA	98		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C5 PFNA	93		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C2 PFDA	83		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C2 PFUnA	77		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C2 PFDoA	76		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C2 PFTeDA	86		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C3 PFBS	102		50 - 150	06/23/21 20:57	06/25/21 14:28	1
18O2 PFHxS	108		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 14:28	1
d3-NMeFOSAA	73		50 - 150	06/23/21 20:57	06/25/21 14:28	1
d5-NEtFOSAA	70		50 - 150	06/23/21 20:57	06/25/21 14:28	1
13C3 HFPO-DA	89		50 - 150	06/23/21 20:57	06/25/21 14:28	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM-SW-1**

**Lab Sample ID: 320-75273-8**

Date Collected: 06/17/21 08:45

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	4.3		2.0	0.58	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluoroheptanoic acid (PFHpA)	2.4		2.0	0.25	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorooctanoic acid (PFOA)	2.2		2.0	0.86	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorononanoic acid (PFNA)	0.46	J	2.0	0.27	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorobutanesulfonic acid (PFBS)	4.3		2.0	0.20	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorohexanesulfonic acid (PFHxS)	17		2.0	0.57	ng/L		06/23/21 20:57	06/25/21 14:55	1
Perfluorooctanesulfonic acid (PFOS)	7.5		2.0	0.54	ng/L		06/23/21 20:57	06/25/21 14:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		06/23/21 20:57	06/25/21 14:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		06/23/21 20:57	06/25/21 14:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		06/23/21 20:57	06/25/21 14:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		06/23/21 20:57	06/25/21 14:55	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		06/23/21 20:57	06/25/21 14:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		06/23/21 20:57	06/25/21 14:55	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	78		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C4 PFHpA	89		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C4 PFOA	96		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C5 PFNA	100		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C2 PFDA	87		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C2 PFUnA	85		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C2 PFDoA	80		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C2 PFTeDA	58		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C3 PFBS	83		50 - 150				06/23/21 20:57	06/25/21 14:55	1
18O2 PFHxS	99		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C4 PFOS	103		50 - 150				06/23/21 20:57	06/25/21 14:55	1
d3-NMeFOSAA	64		50 - 150				06/23/21 20:57	06/25/21 14:55	1
d5-NEtFOSAA	65		50 - 150				06/23/21 20:57	06/25/21 14:55	1
13C3 HFPO-DA	82		50 - 150				06/23/21 20:57	06/25/21 14:55	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM-SW-2**

**Lab Sample ID: 320-75273-9**

Date Collected: 06/17/21 09:30

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	380		2.0	0.58	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluoroheptanoic acid (PFHpA)	170		2.0	0.25	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorooctanoic acid (PFOA)	240		2.0	0.85	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorononanoic acid (PFNA)	46		2.0	0.27	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorodecanoic acid (PFDA)	7.9		2.0	0.31	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluoroundecanoic acid (PFUnA)	1.1	J	2.0	1.1	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		06/23/21 20:57	06/25/21 15:05	1
Perfluorobutanesulfonic acid (PFBS)	58		2.0	0.20	ng/L		06/23/21 20:57	06/25/21 15:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		06/23/21 20:57	06/25/21 15:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		06/23/21 20:57	06/25/21 15:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		06/23/21 20:57	06/25/21 15:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		06/23/21 20:57	06/25/21 15:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		06/23/21 20:57	06/25/21 15:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		06/23/21 20:57	06/25/21 15:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	76		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C4 PFHpA	83		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C4 PFOA	92		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C5 PFNA	86		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C2 PFDA	97		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C2 PFUnA	95		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C2 PFDoA	71		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C2 PFTeDA	32	*5-	50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C3 PFBS	95		50 - 150	06/23/21 20:57	06/25/21 15:05	1
18O2 PFHxS	101		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 15:05	1
d3-NMeFOSAA	69		50 - 150	06/23/21 20:57	06/25/21 15:05	1
d5-NEtFOSAA	79		50 - 150	06/23/21 20:57	06/25/21 15:05	1
13C3 HFPO-DA	88		50 - 150	06/23/21 20:57	06/25/21 15:05	1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	570		20	5.7	ng/L		06/23/21 20:57	06/26/21 16:09	10
Perfluorooctanesulfonic acid (PFOS)	1200		20	5.4	ng/L		06/23/21 20:57	06/26/21 16:09	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	89		50 - 150	06/23/21 20:57	06/26/21 16:09	10
13C4 PFOS	94		50 - 150	06/23/21 20:57	06/26/21 16:09	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM-SW-3**

**Lab Sample ID: 320-75273-10**

Date Collected: 06/17/21 10:05

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	100		1.9	0.55	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluoroheptanoic acid (PFHpA)	56		1.9	0.24	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorooctanoic acid (PFOA)	25		1.9	0.81	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorononanoic acid (PFNA)	10		1.9	0.26	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorodecanoic acid (PFDA)	1.3	J	1.9	0.30	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorobutanesulfonic acid (PFBS)	16		1.9	0.19	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorohexanesulfonic acid (PFHxS)	69		1.9	0.54	ng/L		06/23/21 20:57	06/25/21 15:14	1
Perfluorooctanesulfonic acid (PFOS)	100		1.9	0.52	ng/L		06/23/21 20:57	06/25/21 15:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		06/23/21 20:57	06/25/21 15:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		06/23/21 20:57	06/25/21 15:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		06/23/21 20:57	06/25/21 15:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		06/23/21 20:57	06/25/21 15:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		06/23/21 20:57	06/25/21 15:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		06/23/21 20:57	06/25/21 15:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	49	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C4 PFHpA	59		50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C4 PFOA	60		50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C5 PFNA	59		50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C2 PFDA	49	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C2 PFUnA	46	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C2 PFDoA	42	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C2 PFTeDA	28	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C3 PFBS	53		50 - 150	06/23/21 20:57	06/25/21 15:14	1
18O2 PFHxS	60		50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C4 PFOS	62		50 - 150	06/23/21 20:57	06/25/21 15:14	1
d3-NMeFOSAA	42	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
d5-NEtFOSAA	42	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1
13C3 HFPO-DA	49	*5-	50 - 150	06/23/21 20:57	06/25/21 15:14	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM-SW-4**

**Lab Sample ID: 320-75273-11**

Date Collected: 06/17/21 11:05

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	0.94	J	1.9	0.55	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluoroheptanoic acid (PFHpA)	0.40	J	1.9	0.24	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.81	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.70	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorobutanesulfonic acid (PFBS)	0.67	J	1.9	0.19	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorohexanesulfonic acid (PFHxS)	1.3	J	1.9	0.54	ng/L		06/23/21 20:57	06/25/21 15:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		06/23/21 20:57	06/25/21 15:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.8	1.1	ng/L		06/23/21 20:57	06/25/21 15:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.8	1.2	ng/L		06/23/21 20:57	06/25/21 15:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		06/23/21 20:57	06/25/21 15:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		06/23/21 20:57	06/25/21 15:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.31	ng/L		06/23/21 20:57	06/25/21 15:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		06/23/21 20:57	06/25/21 15:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	80		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C4 PFHpA	96		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C4 PFOA	94		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C5 PFNA	96		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C2 PFDA	91		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C2 PFUnA	75		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C2 PFDoA	66		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C2 PFTeDA	50		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C3 PFBS	93		50 - 150	06/23/21 20:57	06/25/21 15:23	1
18O2 PFHxS	99		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C4 PFOS	99		50 - 150	06/23/21 20:57	06/25/21 15:23	1
d3-NMeFOSAA	65		50 - 150	06/23/21 20:57	06/25/21 15:23	1
d5-NEtFOSAA	57		50 - 150	06/23/21 20:57	06/25/21 15:23	1
13C3 HFPO-DA	81		50 - 150	06/23/21 20:57	06/25/21 15:23	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: LL-SW**

**Lab Sample ID: 320-75273-12**

**Date Collected: 06/17/21 12:15**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	1.0	J	2.1	0.62	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluoroheptanoic acid (PFHpA)	1.5	J	2.1	0.27	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorooctanoic acid (PFOA)	1.2	J	2.1	0.91	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorononanoic acid (PFNA)	0.46	J	2.1	0.29	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorodecanoic acid (PFDA)	ND		2.1	0.33	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.1	1.2	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.1	0.59	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorotridecanoic acid (PFTriA)	ND		2.1	1.4	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.1	0.78	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorobutanesulfonic acid (PFBS)	0.33	J	2.1	0.21	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	2.1	0.61	ng/L		06/23/21 20:57	06/25/21 15:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.1	0.58	ng/L		06/23/21 20:57	06/25/21 15:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.4	1.3	ng/L		06/23/21 20:57	06/25/21 15:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.4	1.4	ng/L		06/23/21 20:57	06/25/21 15:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.1	0.26	ng/L		06/23/21 20:57	06/25/21 15:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.3	1.6	ng/L		06/23/21 20:57	06/25/21 15:32	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ND		2.1	0.34	ng/L		06/23/21 20:57	06/25/21 15:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.1	0.43	ng/L		06/23/21 20:57	06/25/21 15:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C4 PFHpA	88		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C4 PFOA	93		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C5 PFNA	94		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C2 PFDA	85		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C2 PFUnA	77		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C2 PFDoA	74		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C2 PFTeDA	51		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C3 PFBS	100		50 - 150	06/23/21 20:57	06/25/21 15:32	1
18O2 PFHxS	104		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C4 PFOS	101		50 - 150	06/23/21 20:57	06/25/21 15:32	1
d3-NMeFOSAA	65		50 - 150	06/23/21 20:57	06/25/21 15:32	1
d5-NEtFOSAA	61		50 - 150	06/23/21 20:57	06/25/21 15:32	1
13C3 HFPO-DA	85		50 - 150	06/23/21 20:57	06/25/21 15:32	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: HOM-SW-5**

**Lab Sample ID: 320-75273-13**

Date Collected: 06/17/21 12:50

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	140		2.2	0.62	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluoroheptanoic acid (PFHpA)	55		2.2	0.27	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorooctanoic acid (PFOA)	140		2.2	0.91	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorononanoic acid (PFNA)	17		2.2	0.29	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorodecanoic acid (PFDA)	46		2.2	0.33	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluoroundecanoic acid (PFUnA)	1.5	J	2.2	1.2	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorododecanoic acid (PFDoA)	1.2	J	2.2	0.59	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorotridecanoic acid (PFTriA)	ND		2.2	1.4	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.2	0.79	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorobutanesulfonic acid (PFBS)	25		2.2	0.22	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorohexanesulfonic acid (PFHxS)	140		2.2	0.61	ng/L		06/23/21 20:57	06/25/21 15:41	1
Perfluorooctanesulfonic acid (PFOS)	240		2.2	0.58	ng/L		06/23/21 20:57	06/25/21 15:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.4	1.3	ng/L		06/23/21 20:57	06/25/21 15:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.4	1.4	ng/L		06/23/21 20:57	06/25/21 15:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.2	0.26	ng/L		06/23/21 20:57	06/25/21 15:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.3	1.6	ng/L		06/23/21 20:57	06/25/21 15:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.2	0.34	ng/L		06/23/21 20:57	06/25/21 15:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.2	0.43	ng/L		06/23/21 20:57	06/25/21 15:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	90		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C4 PFHpA	108		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C4 PFOA	103		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C5 PFNA	94		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C2 PFDA	94		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C2 PFUnA	81		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C2 PFDoA	77		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C2 PFTeDA	54		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C3 PFBS	103		50 - 150	06/23/21 20:57	06/25/21 15:41	1
18O2 PFHxS	110		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 15:41	1
d3-NMeFOSAA	77		50 - 150	06/23/21 20:57	06/25/21 15:41	1
d5-NEtFOSAA	73		50 - 150	06/23/21 20:57	06/25/21 15:41	1
13C3 HFPO-DA	91		50 - 150	06/23/21 20:57	06/25/21 15:41	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: BL-SW**

**Lab Sample ID: 320-75273-14**

**Date Collected: 06/17/21 13:30**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.8		2.0	0.59	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.25	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorooctanoic acid (PFOA)	2.6		2.0	0.86	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorononanoic acid (PFNA)	0.79	J	2.0	0.27	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.74	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J	2.0	0.20	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorohexanesulfonic acid (PFHxS)	8.6		2.0	0.58	ng/L		06/23/21 20:57	06/25/21 15:50	1
Perfluorooctanesulfonic acid (PFOS)	20		2.0	0.54	ng/L		06/23/21 20:57	06/25/21 15:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		06/23/21 20:57	06/25/21 15:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		06/23/21 20:57	06/25/21 15:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		06/23/21 20:57	06/25/21 15:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		06/23/21 20:57	06/25/21 15:50	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		06/23/21 20:57	06/25/21 15:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		06/23/21 20:57	06/25/21 15:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C4 PFHpA	87		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C4 PFOA	89		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C5 PFNA	82		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C2 PFDA	74		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C2 PFUnA	59		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C2 PFDoA	59		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C2 PFTeDA	54		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C3 PFBS	86		50 - 150	06/23/21 20:57	06/25/21 15:50	1
18O2 PFHxS	88		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C4 PFOS	78		50 - 150	06/23/21 20:57	06/25/21 15:50	1
d3-NMeFOSAA	62		50 - 150	06/23/21 20:57	06/25/21 15:50	1
d5-NEtFOSAA	57		50 - 150	06/23/21 20:57	06/25/21 15:50	1
13C3 HFPO-DA	83		50 - 150	06/23/21 20:57	06/25/21 15:50	1

# Client Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: FB**

**Lab Sample ID: 320-75273-15**

**Date Collected: 06/17/21 12:50**

**Matrix: Water**

**Date Received: 06/22/21 14:38**

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.49	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.21	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.72	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.26	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.93	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.46	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.61	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.17	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.48	ng/L		06/23/21 20:57	06/25/21 15:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.45	ng/L		06/23/21 20:57	06/25/21 15:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.2	1.0	ng/L		06/23/21 20:57	06/25/21 15:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.2	1.1	ng/L		06/23/21 20:57	06/25/21 15:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.7	0.20	ng/L		06/23/21 20:57	06/25/21 15:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.4	1.3	ng/L		06/23/21 20:57	06/25/21 15:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.7	0.27	ng/L		06/23/21 20:57	06/25/21 15:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.7	0.34	ng/L		06/23/21 20:57	06/25/21 15:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C4 PFHpA	94		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C4 PFOA	96		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C5 PFNA	91		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C2 PFDA	82		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C2 PFUnA	81		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C2 PFDoA	94		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C2 PFTeDA	97		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C3 PFBS	99		50 - 150	06/23/21 20:57	06/25/21 15:59	1
18O2 PFHxS	104		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C4 PFOS	97		50 - 150	06/23/21 20:57	06/25/21 15:59	1
d3-NMeFOSAA	69		50 - 150	06/23/21 20:57	06/25/21 15:59	1
d5-NEtFOSAA	73		50 - 150	06/23/21 20:57	06/25/21 15:59	1
13C3 HFPO-DA	85		50 - 150	06/23/21 20:57	06/25/21 15:59	1



# Client Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: GAC System**

**Lab Sample ID: 320-75273-16**

Date Collected: 06/18/21 12:50

Matrix: Water

Date Received: 06/22/21 14:38

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.54	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.80	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.52	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.69	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.54	ng/L		06/24/21 05:01	06/26/21 14:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.51	ng/L		06/24/21 05:01	06/26/21 14:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.7	1.1	ng/L		06/24/21 05:01	06/26/21 14:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.7	1.2	ng/L		06/24/21 05:01	06/26/21 14:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.9	0.23	ng/L		06/24/21 05:01	06/26/21 14:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		3.8	1.4	ng/L		06/24/21 05:01	06/26/21 14:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.9	0.30	ng/L		06/24/21 05:01	06/26/21 14:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	0.38	ng/L		06/24/21 05:01	06/26/21 14:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	81		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C4 PFHpA	87		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C4 PFOA	85		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C5 PFNA	82		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C2 PFDA	77		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C2 PFUnA	72		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C2 PFDoA	86		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C2 PFTeDA	81		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C3 PFBS	98		50 - 150	06/24/21 05:01	06/26/21 14:28	1
18O2 PFHxS	84		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C4 PFOS	86		50 - 150	06/24/21 05:01	06/26/21 14:28	1
d3-NMeFOSAA	81		50 - 150	06/24/21 05:01	06/26/21 14:28	1
d5-NEtFOSAA	77		50 - 150	06/24/21 05:01	06/26/21 14:28	1
13C3 HFPO-DA	81		50 - 150	06/24/21 05:01	06/26/21 14:28	1

# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxA (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFNA (50-150)	PFDA (50-150)	PFUnA (50-150)	PFDoA (50-150)	PFTDA (50-150)
320-75273-1	HOM14-GW	82	94	96	96	85	72	59	60
320-75273-2	KD3-GW	58	69	64	59	51	39 *5-	36 *5-	39 *5-
320-75273-3	HOM5-GW		88	100	88	86	66	76	87
320-75273-3 - DL	HOM5-GW	103							
320-75273-4	HOM5D-GW		90	89	83	77	62	74	75
320-75273-4 - DL	HOM5D-GW	90							
320-75273-5	HOM6-GW	83	88	85	88	89	73	63	28 *5-
320-75273-6	FAA-MW-1	89	91	94	90	84	84	75	85
320-75273-7	FAA-MW-2	97	99	98	93	83	77	76	86
320-75273-8	HOM-SW-1	78	89	96	100	87	85	80	58
320-75273-9	HOM-SW-2	76	83	92	86	97	95	71	32 *5-
320-75273-9 - DL	HOM-SW-2								
320-75273-10	HOM-SW-3	49 *5-	59	60	59	49 *5-	46 *5-	42 *5-	28 *5-
320-75273-11	HOM-SW-4	80	96	94	96	91	75	66	50
320-75273-12	LL-SW	81	88	93	94	85	77	74	51
320-75273-13	HOM-SW-5	90	108	103	94	94	81	77	54
320-75273-14	BL-SW	87	87	89	82	74	59	59	54
320-75273-15	FB	97	94	96	91	82	81	94	97
320-75273-16	GAC System	81	87	85	82	77	72	86	81
LCS 320-501170/2-A	Lab Control Sample	102	103	100	104	89	81	106	93
LCS 320-501203/2-A	Lab Control Sample	80	83	83	76	80	73	76	89
LCS 320-501170/3-A	Lab Control Sample Dup	89	91	99	90	83	82	87	89
LCS 320-501203/3-A	Lab Control Sample Dup	91	91	88	83	85	80	79	86
MB 320-501170/1-A	Method Blank	97	103	101	95	90	82	91	86
MB 320-501203/1-A	Method Blank	89	103	88	92	79	74	82	86

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
320-75273-1	HOM14-GW	93	104	102	70	67	76
320-75273-2	KD3-GW	58	58	62	38 *5-	34 *5-	51
320-75273-3	HOM5-GW	86	96	98	53	65	76
320-75273-3 - DL	HOM5-GW	105					
320-75273-4	HOM5D-GW	84	99	83	59	60	76
320-75273-4 - DL	HOM5D-GW	82					
320-75273-5	HOM6-GW	93	97	102	71	61	81
320-75273-6	FAA-MW-1	97	108	94	61	64	83
320-75273-7	FAA-MW-2	102	108	102	73	70	89
320-75273-8	HOM-SW-1	83	99	103	64	65	82
320-75273-9	HOM-SW-2	95	101	102	69	79	88
320-75273-9 - DL	HOM-SW-2		89	94			
320-75273-10	HOM-SW-3	53	60	62	42 *5-	42 *5-	49 *5-
320-75273-11	HOM-SW-4	93	99	99	65	57	81
320-75273-12	LL-SW	100	104	101	65	61	85
320-75273-13	HOM-SW-5	103	110	102	77	73	91
320-75273-14	BL-SW	86	88	78	62	57	83
320-75273-15	FB	99	104	97	69	73	85
320-75273-16	GAC System	98	84	86	81	77	81
LCS 320-501170/2-A	Lab Control Sample	114	118	113	95	88	95
LCS 320-501203/2-A	Lab Control Sample	98	89	86	81	75	78

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# Isotope Dilution Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Isotope Dilution Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)
LCSD 320-501170/3-A	Lab Control Sample Dup	102	101	98	77	77	81
LCSD 320-501203/3-A	Lab Control Sample Dup	95	93	85	80	79	87
MB 320-501170/1-A	Method Blank	99	103	102	76	81	88
MB 320-501203/1-A	Method Blank	102	95	88	81	85	88

**Surrogate Legend**

- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

**Lab Sample ID: MB 320-501170/1-A**  
**Matrix: Water**  
**Analysis Batch: 501745**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501170**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		06/23/21 20:57	06/25/21 13:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/23/21 20:57	06/25/21 13:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		06/23/21 20:57	06/25/21 13:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		06/23/21 20:57	06/25/21 13:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		06/23/21 20:57	06/25/21 13:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		06/23/21 20:57	06/25/21 13:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		06/23/21 20:57	06/25/21 13:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		06/23/21 20:57	06/25/21 13:06	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	97		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C4 PFHpA	103		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C4 PFOA	101		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C5 PFNA	95		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C2 PFDA	90		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C2 PFUnA	82		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C2 PFDoA	91		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C2 PFTeDA	86		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C3 PFBS	99		50 - 150	06/23/21 20:57	06/25/21 13:06	1
18O2 PFHxS	103		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C4 PFOS	102		50 - 150	06/23/21 20:57	06/25/21 13:06	1
d3-NMeFOSAA	76		50 - 150	06/23/21 20:57	06/25/21 13:06	1
d5-NEtFOSAA	81		50 - 150	06/23/21 20:57	06/25/21 13:06	1
13C3 HFPO-DA	88		50 - 150	06/23/21 20:57	06/25/21 13:06	1

**Lab Sample ID: LCS 320-501170/2-A**  
**Matrix: Water**  
**Analysis Batch: 501745**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501170**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluoroheptanoic acid (PFHpA)	40.0	42.3		ng/L		106	72 - 130
Perfluorooctanoic acid (PFOA)	40.0	45.9		ng/L		115	71 - 133
Perfluorononanoic acid (PFNA)	40.0	44.9		ng/L		112	69 - 130

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# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-501170/2-A**  
**Matrix: Water**  
**Analysis Batch: 501745**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501170**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	48.1		ng/L		120	69 - 133
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	37.6		ng/L		94	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	47.0		ng/L		118	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	33.3		ng/L		94	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	39.0		ng/L		107	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	37.5		ng/L		101	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	44.9		ng/L		112	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	45.3		ng/L		113	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	36.5		ng/L		98	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	41.2		ng/L		103	72 - 132
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	36.3		ng/L		96	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	39.9		ng/L		106	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	102		50 - 150
13C4 PFHpA	103		50 - 150
13C4 PFOA	100		50 - 150
13C5 PFNA	104		50 - 150
13C2 PFDA	89		50 - 150
13C2 PFUnA	81		50 - 150
13C2 PFDoA	106		50 - 150
13C2 PFTeDA	93		50 - 150
13C3 PFBS	114		50 - 150
18O2 PFHxS	118		50 - 150
13C4 PFOS	113		50 - 150
d3-NMeFOSAA	95		50 - 150
d5-NEtFOSAA	88		50 - 150
13C3 HFPO-DA	95		50 - 150

**Lab Sample ID: LCSD 320-501170/3-A**  
**Matrix: Water**  
**Analysis Batch: 501745**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501170**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Perfluorohexanoic acid (PFHxA)	40.0	39.0		ng/L		98	72 - 129	2 30
Perfluoroheptanoic acid (PFHpA)	40.0	40.6		ng/L		101	72 - 130	4 30
Perfluorooctanoic acid (PFOA)	40.0	42.2		ng/L		106	71 - 133	8 30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCSD 320-501170/3-A**  
**Matrix: Water**  
**Analysis Batch: 501745**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501170**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	40.0	43.6		ng/L		109	69 - 130	3	30
Perfluorodecanoic acid (PFDA)	40.0	42.2		ng/L		106	71 - 129	1	30
Perfluoroundecanoic acid (PFUnA)	40.0	42.5		ng/L		106	69 - 133	12	30
Perfluorododecanoic acid (PFDoA)	40.0	44.5		ng/L		111	72 - 134	3	30
Perfluorotridecanoic acid (PFTriA)	40.0	37.5		ng/L		94	65 - 144	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	38.4		ng/L		96	71 - 132	20	30
Perfluorobutanesulfonic acid (PFBS)	35.4	34.1		ng/L		96	72 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.9		ng/L		101	68 - 131	6	30
Perfluorooctanesulfonic acid (PFOS)	37.1	39.4		ng/L		106	65 - 140	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	65 - 136	6	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	43.5		ng/L		109	61 - 135	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	37.7		ng/L		101	77 - 137	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	44.5		ng/L		111	72 - 132	8	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	37.7	36.3		ng/L		96	76 - 136	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	37.9		ng/L		101	81 - 141	5	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	89		50 - 150
13C4 PFHpA	91		50 - 150
13C4 PFOA	99		50 - 150
13C5 PFNA	90		50 - 150
13C2 PFDA	83		50 - 150
13C2 PFUnA	82		50 - 150
13C2 PFDoA	87		50 - 150
13C2 PFTeDA	89		50 - 150
13C3 PFBS	102		50 - 150
18O2 PFHxS	101		50 - 150
13C4 PFOS	98		50 - 150
d3-NMeFOSAA	77		50 - 150
d5-NEtFOSAA	77		50 - 150
13C3 HFPO-DA	81		50 - 150

**Lab Sample ID: MB 320-501203/1-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		06/24/21 05:01	06/26/21 14:00	1

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# QC Sample Results

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: MB 320-501203/1-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		06/24/21 05:01	06/26/21 14:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/24/21 05:01	06/26/21 14:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		06/24/21 05:01	06/26/21 14:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		06/24/21 05:01	06/26/21 14:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	0.24	ng/L		06/24/21 05:01	06/26/21 14:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		4.0	1.5	ng/L		06/24/21 05:01	06/26/21 14:00	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	ND		2.0	0.32	ng/L		06/24/21 05:01	06/26/21 14:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.40	ng/L		06/24/21 05:01	06/26/21 14:00	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	89		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C4 PFHpA	103		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C4 PFOA	88		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C5 PFNA	92		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C2 PFDA	79		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C2 PFUnA	74		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C2 PFDoA	82		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C2 PFTeDA	86		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C3 PFBS	102		50 - 150	06/24/21 05:01	06/26/21 14:00	1
18O2 PFHxS	95		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C4 PFOS	88		50 - 150	06/24/21 05:01	06/26/21 14:00	1
d3-NMeFOSAA	81		50 - 150	06/24/21 05:01	06/26/21 14:00	1
d5-NEtFOSAA	85		50 - 150	06/24/21 05:01	06/26/21 14:00	1
13C3 HFPO-DA	88		50 - 150	06/24/21 05:01	06/26/21 14:00	1

**Lab Sample ID: LCS 320-501203/2-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Perfluorohexanoic acid (PFHxA)	40.0	47.2		ng/L		118	72 - 129
Perfluoroheptanoic acid (PFHpA)	40.0	46.4		ng/L		116	72 - 130
Perfluorooctanoic acid (PFOA)	40.0	44.6		ng/L		111	71 - 133
Perfluorononanoic acid (PFNA)	40.0	47.9		ng/L		120	69 - 130
Perfluorodecanoic acid (PFDA)	40.0	43.2		ng/L		108	71 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	43.7		ng/L		109	69 - 133

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCS 320-501203/2-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA)	40.0	45.6		ng/L		114	72 - 134
Perfluorotridecanoic acid (PFTriA)	40.0	44.7		ng/L		112	65 - 144
Perfluorotetradecanoic acid (PFTeA)	40.0	42.4		ng/L		106	71 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	33.3		ng/L		94	72 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	39.1		ng/L		107	68 - 131
Perfluorooctanesulfonic acid (PFOS)	37.1	41.6		ng/L		112	65 - 140
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.6		ng/L		106	65 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	47.1		ng/L		118	61 - 135
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	39.3		ng/L		105	77 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	44.7		ng/L		112	72 - 132
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.7	41.3		ng/L		110	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	43.3		ng/L		115	81 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	80		50 - 150
13C4 PFHpA	83		50 - 150
13C4 PFOA	83		50 - 150
13C5 PFNA	76		50 - 150
13C2 PFDA	80		50 - 150
13C2 PFUnA	73		50 - 150
13C2 PFDoA	76		50 - 150
13C2 PFTeDA	89		50 - 150
13C3 PFBS	98		50 - 150
18O2 PFHxS	89		50 - 150
13C4 PFOS	86		50 - 150
d3-NMeFOSAA	81		50 - 150
d5-NEtFOSAA	75		50 - 150
13C3 HFPO-DA	78		50 - 150

**Lab Sample ID: LCSD 320-501203/3-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Perfluorohexanoic acid (PFHxA)	40.0	40.1		ng/L		100	72 - 129	16	30
Perfluoroheptanoic acid (PFHpA)	40.0	44.1		ng/L		110	72 - 130	5	30
Perfluorooctanoic acid (PFOA)	40.0	41.7		ng/L		104	71 - 133	7	30
Perfluorononanoic acid (PFNA)	40.0	48.0		ng/L		120	69 - 130	0	30
Perfluorodecanoic acid (PFDA)	40.0	44.2		ng/L		110	71 - 129	2	30

Eurofins TestAmerica, Sacramento



# QC Sample Results

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

**Lab Sample ID: LCSD 320-501203/3-A**  
**Matrix: Water**  
**Analysis Batch: 501893**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 501203**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	40.0	44.9		ng/L		112	69 - 133	3	30
Perfluorododecanoic acid (PFDoA)	40.0	45.2		ng/L		113	72 - 134	1	30
Perfluorotridecanoic acid (PFTriA)	40.0	42.3		ng/L		106	65 - 144	6	30
Perfluorotetradecanoic acid (PFTeA)	40.0	42.5		ng/L		106	71 - 132	0	30
Perfluorobutanesulfonic acid (PFBS)	35.4	33.3		ng/L		94	72 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	40.3		ng/L		111	68 - 131	3	30
Perfluorooctanesulfonic acid (PFOS)	37.1	41.0		ng/L		110	65 - 140	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.4		ng/L		108	65 - 136	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	43.6		ng/L		109	61 - 135	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.3	43.1		ng/L		116	77 - 137	9	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	41.0		ng/L		103	72 - 132	8	30
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid	37.7	45.0		ng/L		119	76 - 136	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	45.4		ng/L		121	81 - 141	5	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	91		50 - 150
13C4 PFHpA	91		50 - 150
13C4 PFOA	88		50 - 150
13C5 PFNA	83		50 - 150
13C2 PFDA	85		50 - 150
13C2 PFUnA	80		50 - 150
13C2 PFDoA	79		50 - 150
13C2 PFTeDA	86		50 - 150
13C3 PFBS	95		50 - 150
18O2 PFHxS	93		50 - 150
13C4 PFOS	85		50 - 150
d3-NMeFOSAA	80		50 - 150
d5-NEtFOSAA	79		50 - 150
13C3 HFPO-DA	87		50 - 150

# QC Association Summary

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## LCMS

### Prep Batch: 501170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75273-1	HOM14-GW	Total/NA	Water	3535	
320-75273-2	KD3-GW	Total/NA	Water	3535	
320-75273-3	HOM5-GW	Total/NA	Water	3535	
320-75273-3 - DL	HOM5-GW	Total/NA	Water	3535	
320-75273-4 - DL	HOM5D-GW	Total/NA	Water	3535	
320-75273-4	HOM5D-GW	Total/NA	Water	3535	
320-75273-5	HOM6-GW	Total/NA	Water	3535	
320-75273-6	FAA-MW-1	Total/NA	Water	3535	
320-75273-7	FAA-MW-2	Total/NA	Water	3535	
320-75273-8	HOM-SW-1	Total/NA	Water	3535	
320-75273-9	HOM-SW-2	Total/NA	Water	3535	
320-75273-9 - DL	HOM-SW-2	Total/NA	Water	3535	
320-75273-10	HOM-SW-3	Total/NA	Water	3535	
320-75273-11	HOM-SW-4	Total/NA	Water	3535	
320-75273-12	LL-SW	Total/NA	Water	3535	
320-75273-13	HOM-SW-5	Total/NA	Water	3535	
320-75273-14	BL-SW	Total/NA	Water	3535	
320-75273-15	FB	Total/NA	Water	3535	
MB 320-501170/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-501170/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-501170/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Prep Batch: 501203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75273-16	GAC System	Total/NA	Water	3535	
MB 320-501203/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-501203/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-501203/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Analysis Batch: 501745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75273-1	HOM14-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-2	KD3-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-3	HOM5-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-4	HOM5D-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-5	HOM6-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-6	FAA-MW-1	Total/NA	Water	EPA 537(Mod)	501170
320-75273-7	FAA-MW-2	Total/NA	Water	EPA 537(Mod)	501170
320-75273-8	HOM-SW-1	Total/NA	Water	EPA 537(Mod)	501170
320-75273-9	HOM-SW-2	Total/NA	Water	EPA 537(Mod)	501170
320-75273-10	HOM-SW-3	Total/NA	Water	EPA 537(Mod)	501170
320-75273-11	HOM-SW-4	Total/NA	Water	EPA 537(Mod)	501170
320-75273-12	LL-SW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-13	HOM-SW-5	Total/NA	Water	EPA 537(Mod)	501170
320-75273-14	BL-SW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-15	FB	Total/NA	Water	EPA 537(Mod)	501170
MB 320-501170/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	501170
LCS 320-501170/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	501170
LCSD 320-501170/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	501170

# QC Association Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## LCMS

### Analysis Batch: 501893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75273-16	GAC System	Total/NA	Water	EPA 537(Mod)	501203
MB 320-501203/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	501203
LCS 320-501203/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	501203
LCSD 320-501203/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	501203

### Analysis Batch: 502158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-75273-3 - DL	HOM5-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-4 - DL	HOM5D-GW	Total/NA	Water	EPA 537(Mod)	501170
320-75273-9 - DL	HOM-SW-2	Total/NA	Water	EPA 537(Mod)	501170

# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Client Sample ID: HOM14-GW

Date Collected: 06/16/21 10:00

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.1 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 13:33	K1S	TAL SAC

## Client Sample ID: KD3-GW

Date Collected: 06/16/21 11:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			240.1 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 13:42	K1S	TAL SAC

## Client Sample ID: HOM5-GW

Date Collected: 06/16/21 12:30

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.8 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 13:52	K1S	TAL SAC
Total/NA	Prep	3535	DL		258.8 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			502158	06/26/21 15:51	K1S	TAL SAC

## Client Sample ID: HOM5D-GW

Date Collected: 06/16/21 12:20

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 14:01	K1S	TAL SAC
Total/NA	Prep	3535	DL		256 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			502158	06/26/21 16:00	K1S	TAL SAC

## Client Sample ID: HOM6-GW

Date Collected: 06/16/21 14:10

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			244.1 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 14:10	K1S	TAL SAC

## Client Sample ID: FAA-MW-1

Date Collected: 06/16/21 16:30

Date Received: 06/22/21 14:38

## Lab Sample ID: 320-75273-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.4 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 14:19	K1S	TAL SAC

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# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

**Client Sample ID: FAA-MW-2**

**Lab Sample ID: 320-75273-7**

Date Collected: 06/16/21 17:25

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			241 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 14:28	K1S	TAL SAC

**Client Sample ID: HOM-SW-1**

**Lab Sample ID: 320-75273-8**

Date Collected: 06/17/21 08:45

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248.3 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 14:55	K1S	TAL SAC

**Client Sample ID: HOM-SW-2**

**Lab Sample ID: 320-75273-9**

Date Collected: 06/17/21 09:30

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			249.9 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:05	K1S	TAL SAC
Total/NA	Prep	3535	DL		249.9 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	10			502158	06/26/21 16:09	K1S	TAL SAC

**Client Sample ID: HOM-SW-3**

**Lab Sample ID: 320-75273-10**

Date Collected: 06/17/21 10:05

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.1 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:14	K1S	TAL SAC

**Client Sample ID: HOM-SW-4**

**Lab Sample ID: 320-75273-11**

Date Collected: 06/17/21 11:05

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.7 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:23	K1S	TAL SAC

**Client Sample ID: LL-SW**

**Lab Sample ID: 320-75273-12**

Date Collected: 06/17/21 12:15

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			232.7 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:32	K1S	TAL SAC

# Lab Chronicle

Client: Shannon & Wilson, Inc  
 Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Client Sample ID: HOM-SW-5

Lab Sample ID: 320-75273-13

Date Collected: 06/17/21 12:50

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			232.3 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:41	K1S	TAL SAC

## Client Sample ID: BL-SW

Lab Sample ID: 320-75273-14

Date Collected: 06/17/21 13:30

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			247.8 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:50	K1S	TAL SAC

## Client Sample ID: FB

Lab Sample ID: 320-75273-15

Date Collected: 06/17/21 12:50

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			297.1 mL	10.0 mL	501170	06/23/21 20:57	AP	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501745	06/25/21 15:59	K1S	TAL SAC

## Client Sample ID: GAC System

Lab Sample ID: 320-75273-16

Date Collected: 06/18/21 12:50

Matrix: Water

Date Received: 06/22/21 14:38

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			266.2 mL	10.0 mL	501203	06/24/21 05:01	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			501893	06/26/21 14:28	S1M	TAL SAC

### Laboratory References:

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

# Accreditation/Certification Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

## Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24

1

2

3

4

5

6

7

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9

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11

12

13

14

15

# Method Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod) 3535	PFAS for QSM 5.3, Table B-15 Solid-Phase Extraction (SPE)	EPA SW846	TAL SAC TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

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

**Laboratory References:**

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





# Sample Summary

Client: Shannon & Wilson, Inc  
Project/Site: Homer Airport PFAS

Job ID: 320-75273-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-75273-1	HOM14-GW	Water	06/16/21 10:00	06/22/21 14:38	
320-75273-2	KD3-GW	Water	06/16/21 11:10	06/22/21 14:38	
320-75273-3	HOM5-GW	Water	06/16/21 12:30	06/22/21 14:38	
320-75273-4	HOM5D-GW	Water	06/16/21 12:20	06/22/21 14:38	
320-75273-5	HOM6-GW	Water	06/16/21 14:10	06/22/21 14:38	
320-75273-6	FAA-MW-1	Water	06/16/21 16:30	06/22/21 14:38	
320-75273-7	FAA-MW-2	Water	06/16/21 17:25	06/22/21 14:38	
320-75273-8	HOM-SW-1	Water	06/17/21 08:45	06/22/21 14:38	
320-75273-9	HOM-SW-2	Water	06/17/21 09:30	06/22/21 14:38	
320-75273-10	HOM-SW-3	Water	06/17/21 10:05	06/22/21 14:38	
320-75273-11	HOM-SW-4	Water	06/17/21 11:05	06/22/21 14:38	
320-75273-12	LL-SW	Water	06/17/21 12:15	06/22/21 14:38	
320-75273-13	HOM-SW-5	Water	06/17/21 12:50	06/22/21 14:38	
320-75273-14	BL-SW	Water	06/17/21 13:30	06/22/21 14:38	
320-75273-15	FB	Water	06/17/21 12:50	06/22/21 14:38	
320-75273-16	GAC System	Water	06/18/21 12:50	06/22/21 14:38	

# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:  Normal  Rush  
 Please Specify: \_\_\_\_\_  
 Quote No.: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

PFAS-18 537.1

Total Number of Containers

Remarks/Matrix Composition/Grab? Sample Containers

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
HOM14-GW		10:00	6/16/21	✓
KD3-GW		11:10		
HOM5-GW		12:30		
HOM5D-GW		12:20		
HOM6-GW		14:10		
FAA-MW-1		16:30		
FAA-MW-2		17:25		
HOM-SW-1		8:45	6/17/21	
HOM-SW-2		9:30		
HOM-SW-3		10:05		

2 Groundwater Grab Sample

Surface water grab sample



**Project Information**  
 Number: 106031  
 Name: Homer Airport PFAS  
 Contact: Ashley Jaramillo  
 Ongoing Project? Yes  No   
 Sampler: APW, MED

**Sample Receipt**  
 Total No. of Containers: 28  
 COC Seals/Intact? Y/N/NA: Y  
 Received Good Cond./Cold: Y  
 Temp: 5.4  
 Delivery Method: AK Air Cargo

**Notes:**  
 Groundwater and surface water may contain sediment and suspended organics.

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Company: <u>Shannon &amp; Wilson, Inc.</u> Time: <u>11:00</u> Date: <u>6/21/21</u>	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____	Signature: _____ Printed Name: _____ Company: _____ Time: _____ Date: _____
Received By: <u>[Signature]</u> Printed Name: <u>[Signature]</u> Company: _____ Time: <u>1:30</u> Date: <u>6/21/21</u>	Received By: <u>2.</u>	Received By: <u>3.</u>

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

ID: FAA-MW-1 & 6/21/21  
 ID: 1 of 2 ID: HOM S - SUBJ S67144



# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)



Quote No: \_\_\_\_\_  
 MSA Number: \_\_\_\_\_  
 J-Flags:  Yes  No

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Sample Identity	Lab No.	Time	Date Sampled	Remarks/Matrix Composition/Grab? Sample Containers
HOM-SW-4		11:05	6/17/21	2 Surface H2O grab sample
LL-SW		12:15		
HOM-SW-5		12:50		
BL-SW		13:30		
MED, CAB				

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: <u>106031</u> Name: <u>Homer Airport PFAS</u> Contact: <u>Ashley Jaramila</u> Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Sampler: <u>APW, MED</u>	Total No. of Containers: <u>28</u> COC Seals/Intact? Y/N/NA <u>Y</u> Received Good Cond./Cold <u>Y</u> Temp: <u>5.4</u> Delivery Method: <u>AK Air Cargo</u>	Signature: <u>Adam Wyborny</u> Printed Name: <u>Adam Wyborny</u> Date: <u>6/21/21</u> Company: <u>Shannon + Wilson, Inc.</u>	Signature: _____ Printed Name: _____ Date: _____ Company: _____	Signature: _____ Printed Name: _____ Date: _____ Company: _____
Notes: _____		Received By: 1. Signature: <u>[Signature]</u> Printed Name: <u>David Altkoetter</u> Date: <u>6/17/21</u> Company: <u>ETA Son</u>	Received By: 2. Signature: _____ Printed Name: _____ Date: _____ Company: _____	Received By: 3. Signature: _____ Printed Name: _____ Date: _____ Company: _____

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file

Received 2 Extra Containers  
 Received 10: FB, Date 6/17/21, Time 12:50 to 6/22/21  
 Received 10: GAC System, Date: 6/18

## Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-75273-1

**Login Number: 75273**

**List Number: 1**

**Creator: Her, David A**

**List Source: Eurofins TestAmerica, Sacramento**

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

**Laboratory Data Review Checklist**

Completed By:

Adam Wyborny, PE

Title:

Environmental Engineer

Date:

July 6, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins Environment Testing

Laboratory Report Number:

320-75273-1

Laboratory Report Date:

June 30, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

ADEC File Number:

2314.38.042

Hazard Identification Number:

27309

320-75273-1

Laboratory Report Date:

June 30, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

**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:

The DEC certified TestAmerica of West Sacramento, CA for the analysis of per- and polyfluorinated alkyl substances (PFAS) on February 11, 2021 by LCMSMS compliant with QSM Version 5.3 Table B-15. These reported analytes were included in the DEC’s Contaminated Sites Laboratory Approval 17-020.

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:

The samples were not transferred to a network laboratory.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

Two samples were erroneously omitted from the COC. These two samples consist of the field blank and a confirmation sample from the effluent of the granular activated carbon (GAC) treated purge water. These samples were submitted with this work order and logged in per the information on their labels. The laboratory noted their presence on the margin of the COC.

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

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b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The sample receipt form notes that the samples arrived in good condition and properly preserved.

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:

The two field QC samples not listed on the COC were verified with the project manager and analyzed within holding time. The results were not affected by this discrepancy.

e. Data quality or usability affected?

Comments:

The data quality/usability is not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The samples *KD3-GW*, *HOM6-GW*, *HOM-SW-2*, and *HOM-SW-3* exhibited low recovery for one or more isotope dilution analytes (IDA). The case narrative states that data quality is not typically considered affected if the IDA signal-to-noise ratio is greater than 10:1, which was achieved for all IDA in these samples. Refer to Section 6.d for further assessment.

The results for samples *HOM5-GW*, *HOM5D-GW*, and *HOM-SW-2* were reported from the analyses of diluted extracts. These samples were diluted due to the presence of high concentrations of the target analytes in the undiluted extracts.

The samples *KD3-GW*, *HOM5-GW*, *HOM5D-GW*, *HOM6-GW*, *HOM14-GW*, *FAA-MW-1*, *FAA-MW-2*, *HOM-SW-1*, *HOM-SW-2*, *HOM-SW-3*, *HOM-SW-4*, *HOM-SW-5*, *LL-SW*, and *BL-SW* were observed to be cloudy with a light-brown hue prior to extraction.

Insufficient sample volume was available to perform a matrix spike (MS) and MS duplicate (MSD) via method 3535 in conjunction with preparation batches 320-501170 and 320-501203.

The extract for samples *HOM6-GW*, *HOM-SW-1*, *HOM-SW-2*, *HOM-SW-3*, *HOM-SW-4*, *HOM-SW-5*, and *LL-SW* were observed to have a yellow hue after final voluming.

The samples *KD3-GW*, *HOM-SW-3*, and *BL-SW* contained non-settleable particulates which clogged the solid-phase extraction column during the extraction process.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The laboratory diluted samples *HOM5-GW*, *HOM5D-GW*, and *HOM-SW-2* due to the concentrations of target analytes exceeding the instrument's calibration range in the undiluted extracts. The dilution factors were applied to the labeled internal standard area counts.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify an effect on data quality/usability.



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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soil samples were not submitted with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

The data quality/usability is not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected. Target analytes were not detected in the method blank samples.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The samples for this submittal were not affected by laboratory equipment contamination.

v. Data quality or usability affected?

Comments:

The data quality/usability is 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:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested with this work order.

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:

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:

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ADOT&PF Homer Airport Statewide PFAS

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Method accuracy and precision were demonstrated to be within acceptable limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Qualification of the results was not required; see section 6.b.v above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

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:

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v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

The recoveries of the IDAs 13C2 PFUnA, 13C2 PFD<sub>o</sub>A, 13C2 PFTeDA, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in sample *KD3-GW*.

The recovery of the IDA 13C2 PFTeDA was below the laboratory's lower control limit in the samples *HOM6-GW* and *HOM-SW-2*.

The recoveries of the IDAs 13C2 PFHxA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFD<sub>o</sub>A, 13C2 PFTeDA, d3-NMeFOSAA, d5-NEtFOSAA, and 13C3 HFPO-DA were below the laboratory's lower control limits in sample *HOM-SW-3*.

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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:

The non-detect perfluoroundecanoic acid (PFUnA), perfluorododecanoic acid (PFDoA), perfluorotetradecanoic acid (PFTeA), N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA), and N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) results of the sample *KD3-GW* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFTeA results of samples *HOM6-GW* and *HOM-SW-2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

The non-detect PFUnA, PFDoA, PFTeA, NMeFOSAA, NEtFOSAA, and hexafluoropropylene oxide dimer acid (HFPO-DA) results of the sample *HOM-SW-3* are considered estimated and flagged 'UJ' due to the low IDA recoveries. Similarly, the detected perfluorohexanoic acid (PFHxA) and perfluorodecanoic acid (PFDA) results of sample *HOM-SW-3* are considered estimated and flagged 'J' due to the low IDA recoveries.

iv. Data quality or usability affected?

Comments:

The data quality is affected; see above.

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:

Only PFAS analysis via EPA method 537.1 was requested for this work order. PFAS are non-volatile compounds, so a trip blank is not required.

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:

A trip blank was not required for these samples.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

A trip blank was not required for these samples.

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iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; a trip blank was not submitted with this work order.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

The field duplicate samples *HOM5-GW* and *HOM5D-GW* were submitted with this sample batch. While not explicitly identified as a duplicate on the COC, the labeling convention for the duplicate sample was not discrete enough for the sample to be considered "blind."

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

The relative precision demonstrated between the detected results of the field duplicate samples met the recommended DQO of 30% for all analytes.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The data quality/usability is not affected.

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ADOT&PF Homer Airport Statewide PFAS

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples for this project were not collected with reusable equipment. There is therefore no practical potential for analyte contributions attributable to equipment-based sample cross-contamination. A field blank sample was analyzed which revealed no detections for target PFAS.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

An equipment blank was not submitted with this work order.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

No additional data flags/qualifiers are required.



## Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks  
2355 Hill Road  
Fairbanks, AK 99709  
(907)458-3118

Report Number: **1213521**

Client Project: **106031 Homer Airport PFAS**

Dear Ashley Jaramillo,

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 Jennifer 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.

---

Jennifer Dawkins  
Project Manager  
Jennifer.Dawkins@sgs.com

Date



## Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**  
SGS Project: **1213521**  
Project Name/Site: **106031 Homer Airport PFAS**  
Project Contact: **Ashley Jaramillo**

Refer to sample receipt form for information on sample condition.

### **HOM5-GW (1213521001) PS**

8270D SIM - PAH MB surrogate recoveries for 2-methylnaphthalene-d10 and fluoranthene-d10 do not meet QC criteria. The sample was re-extracted outside of hold time to confirm results for all associated analytes. Results are confirmed and in-hold data is reported.

### **HOM6-GW (1213521003) PS**

8270D SIM - PAH surrogate recoveries for 2-methylnaphthalene-d10 and fluoranthene-d10 do not meet QC criteria. The sample was re-extracted outside of hold time to confirm results for associated analytes. Results are confirmed and in-hold data is reported.

### **MB for HBN 1821230 [XXX/45025] (1618109) MB**

8270D SIM - PAH MB surrogate recoveries for 2-methylnaphthalene-d10 and fluoranthene-d10 do not meet QC criteria. The surrogate recoveries for the associated LCS/LCSD meets QC criteria. All associated samples report analytes at less than the LOQ.

\*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: 07/13/2021 4:32:29PM

### Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
<b>8270D SIM LV (PAH)</b>				
1213521001	HOM5-GW	XMS12715	2-Methylnaphthalene	BLC
1213521002	HOM5D-GW	XMS12715	Phenanthrene	BLC

#### Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 DW Chemistry (Provisionally Certified as of 05/27/2021 for Mercury by EPA200.8, Nitrate as N by SM 4500NO3-F and VOCs by EPA 524.2) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
HOM5-GW	1213521001	06/16/2021	06/22/2021	Water (Surface, Eff., Ground)
HOM5D-GW	1213521002	06/16/2021	06/22/2021	Water (Surface, Eff., Ground)
HOM6-GW	1213521003	06/16/2021	06/22/2021	Water (Surface, Eff., Ground)
FAA-MW-2	1213521004	06/16/2021	06/22/2021	Water (Surface, Eff., Ground)
Trip Blanks	1213521005	06/16/2021	06/22/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)

Print Date: 07/13/2021 4:32:33PM

### Detectable Results Summary

Client Sample ID: **HOM5-GW**

Lab Sample ID: 1213521001

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
2-Methylnaphthalene	0.0409J	ug/L
Naphthalene	0.0600J	ug/L
Phenanthrene	0.0386J	ug/L
Diesel Range Organics	0.441J	mg/L
Residual Range Organics	0.327J	mg/L

**Semivolatile Organic Fuels**

Client Sample ID: **HOM5D-GW**

Lab Sample ID: 1213521002

**Polynuclear Aromatics GC/MS**

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Phenanthrene	0.0189J	ug/L
Diesel Range Organics	0.580J	mg/L
Residual Range Organics	0.482J	mg/L

Client Sample ID: **HOM6-GW**

Lab Sample ID: 1213521003

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.608J	mg/L
Residual Range Organics	1.20	mg/L

Client Sample ID: **FAA-MW-2**

Lab Sample ID: 1213521004

**Polynuclear Aromatics GC/MS**

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	0.0294J	ug/L
2-Methylnaphthalene	0.0312J	ug/L
Naphthalene	0.0468J	ug/L
Diesel Range Organics	0.523J	mg/L
Residual Range Organics	0.312J	mg/L



### Results of HOM5-GW

Client Sample ID: **HOM5-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521001  
 Lab Project ID: 1213521

Collection Date: 06/16/21 12:30  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
2-Methylnaphthalene	0.0409 J	0.0481	0.0144	ug/L	1		07/06/21 00:38
Acenaphthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Acenaphthylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Benzo(a)Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Benzo[a]pyrene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 00:38
Benzo[b]Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Benzo[g,h,i]perylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Benzo[k]fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Chrysene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Dibenzo[a,h]anthracene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 00:38
Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Fluorene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Indeno[1,2,3-c,d] pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
Naphthalene	0.0600 J	0.0962	0.0298	ug/L	1		07/06/21 00:38
Phenanthrene	0.0386 J	0.0481	0.0144	ug/L	1		07/06/21 00:38
Pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:38
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	71	42-86		%	1		07/06/21 00:38
Fluoranthene-d10 (surr)	77.2	50-97		%	1		07/06/21 00:38

### Batch Information

Analytical Batch: XMS12715  
 Analytical Method: 8270D SIM LV (PAH)  
 Analyst: LAW  
 Analytical Date/Time: 07/06/21 00:38  
 Container ID: 1213521001-C

Prep Batch: XXX45025  
 Prep Method: SW3535A  
 Prep Date/Time: 06/23/21 15:00  
 Prep Initial Wt./Vol.: 260 mL  
 Prep Extract Vol: 1 mL

## Results of HOM5-GW

Client Sample ID: **HOM5-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521001  
 Lab Project ID: 1213521

Collection Date: 06/16/21 12:30  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.441 J	0.577	0.173	mg/L	1		06/24/21 19:02
<b>Surrogates</b>							
5a Androstane (surr)	101	50-150		%	1		06/24/21 19:02

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK102  
 Analyst: IVM  
 Analytical Date/Time: 06/24/21 19:02  
 Container ID: 1213521001-A

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 06/23/21 15:38  
 Prep Initial Wt./Vol.: 260 mL  
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.327 J	0.481	0.144	mg/L	1		06/24/21 19:02
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	113	50-150		%	1		06/24/21 19:02

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK103  
 Analyst: IVM  
 Analytical Date/Time: 06/24/21 19:02  
 Container ID: 1213521001-A

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 06/23/21 15:38  
 Prep Initial Wt./Vol.: 260 mL  
 Prep Extract Vol: 1 mL



**Results of HOM5-GW**

Client Sample ID: **HOM5-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521001  
Lab Project ID: 1213521

Collection Date: 06/16/21 12:30  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		06/28/21 06:52
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	94	50-150		%	1		06/28/21 06:52

**Batch Information**

Analytical Batch: VFC15681  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/28/21 06:52  
Container ID: 1213521001-E

Prep Batch: VXX37317  
Prep Method: SW5030B  
Prep Date/Time: 06/27/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL





**Results of HOM5-GW**

Client Sample ID: **HOM5-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521001  
Lab Project ID: 1213521

Collection Date: 06/16/21 12:30  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		06/24/21 21:19
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:19
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:19
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/24/21 21:19
Toluene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:19
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/24/21 21:19
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	1		06/24/21 21:19
4-Bromofluorobenzene (surr)	107	85-114		%	1		06/24/21 21:19
Toluene-d8 (surr)	101	89-112		%	1		06/24/21 21:19

**Batch Information**

Analytical Batch: VMS20852  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 06/24/21 21:19  
Container ID: 1213521001-G

Prep Batch: VXX37298  
Prep Method: SW5030B  
Prep Date/Time: 06/24/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



**Results of HOM5D-GW**

Client Sample ID: **HOM5D-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521002  
Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
2-Methylnaphthalene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Acenaphthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Acenaphthylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Benzo(a)Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Benzo[a]pyrene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 00:58
Benzo[b]Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Benzo[g,h,i]perylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Benzo[k]fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Chrysene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Dibenzo[a,h]anthracene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 00:58
Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Fluorene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Indeno[1,2,3-c,d] pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
Naphthalene	0.0481 U	0.0962	0.0298	ug/L	1		07/06/21 00:58
Phenanthrene	0.0189 J	0.0481	0.0144	ug/L	1		07/06/21 00:58
Pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 00:58
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	64.7	42-86		%	1		07/06/21 00:58
Fluoranthene-d10 (surr)	71.6	50-97		%	1		07/06/21 00:58

**Batch Information**

Analytical Batch: XMS12715  
Analytical Method: 8270D SIM LV (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/06/21 00:58  
Container ID: 1213521002-C

Prep Batch: XXX45025  
Prep Method: SW3535A  
Prep Date/Time: 06/23/21 15:00  
Prep Initial Wt./Vol.: 260 mL  
Prep Extract Vol: 1 mL



Results of **HOM5D-GW**

Client Sample ID: **HOM5D-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521002  
Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.580 J	0.588	0.176	mg/L	1		06/24/21 19:12
<b>Surrogates</b>							
5a Androstane (surr)	89.5	50-150		%	1		06/24/21 19:12

**Batch Information**

Analytical Batch: XFC15969  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 19:12  
Container ID: 1213521002-A

Prep Batch: XXX45027  
Prep Method: SW3520C  
Prep Date/Time: 06/23/21 15:38  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.482 J	0.490	0.147	mg/L	1		06/24/21 19:12
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	101	50-150		%	1		06/24/21 19:12

**Batch Information**

Analytical Batch: XFC15969  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 19:12  
Container ID: 1213521002-A

Prep Batch: XXX45027  
Prep Method: SW3520C  
Prep Date/Time: 06/23/21 15:38  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL

## Results of HOM5D-GW

Client Sample ID: **HOM5D-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521002  
 Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		06/28/21 07:10
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	94.8	50-150		%	1		06/28/21 07:10

## Batch Information

Analytical Batch: VFC15681  
 Analytical Method: AK101  
 Analyst: IJV  
 Analytical Date/Time: 06/28/21 07:10  
 Container ID: 1213521002-E

Prep Batch: VXX37317  
 Prep Method: SW5030B  
 Prep Date/Time: 06/27/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of **HOM5D-GW**

Client Sample ID: **HOM5D-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521002  
Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		06/24/21 21:34
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:34
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:34
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/24/21 21:34
Toluene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:34
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/24/21 21:34

**Surrogates**

1,2-Dichloroethane-D4 (surr)	105	81-118		%	1		06/24/21 21:34
4-Bromofluorobenzene (surr)	107	85-114		%	1		06/24/21 21:34
Toluene-d8 (surr)	102	89-112		%	1		06/24/21 21:34

**Batch Information**

Analytical Batch: VMS20852  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 06/24/21 21:34  
Container ID: 1213521002-G

Prep Batch: VXX37298  
Prep Method: SW5030B  
Prep Date/Time: 06/24/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of **HOM6-GW**

Client Sample ID: **HOM6-GW**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521003  
Lab Project ID: 1213521

Collection Date: 06/16/21 14:10  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
2-Methylnaphthalene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Acenaphthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Acenaphthylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Benzo(a)Anthracene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Benzo[a]pyrene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 01:19
Benzo[b]Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Benzo[g,h,i]perylene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Benzo[k]fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Chrysene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Dibenzo[a,h]anthracene	0.00960 U	0.0192	0.00596	ug/L	1		07/06/21 01:19
Fluoranthene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Fluorene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Indeno[1,2,3-c,d] pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Naphthalene	0.0481 U	0.0962	0.0298	ug/L	1		07/06/21 01:19
Phenanthrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
Pyrene	0.0240 U	0.0481	0.0144	ug/L	1		07/06/21 01:19
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	17.6	*	42-86	%	1		07/06/21 01:19
Fluoranthene-d10 (surr)	12.6	*	50-97	%	1		07/06/21 01:19

**Batch Information**

Analytical Batch: XMS12715  
Analytical Method: 8270D SIM LV (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/06/21 01:19  
Container ID: 1213521003-C

Prep Batch: XXX45025  
Prep Method: SW3535A  
Prep Date/Time: 06/23/21 15:00  
Prep Initial Wt./Vol.: 260 mL  
Prep Extract Vol: 1 mL

## Results of HOM6-GW

Client Sample ID: **HOM6-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521003  
 Lab Project ID: 1213521

Collection Date: 06/16/21 14:10  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.608 J	0.612	0.184	mg/L	1		06/24/21 19:22
<b>Surrogates</b>							
5a Androstane (surr)	78.8	50-150		%	1		06/24/21 19:22

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK102  
 Analyst: IVM  
 Analytical Date/Time: 06/24/21 19:22  
 Container ID: 1213521003-A

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 06/23/21 15:38  
 Prep Initial Wt./Vol.: 245 mL  
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.20	0.510	0.153	mg/L	1		06/24/21 19:22
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	86.8	50-150		%	1		06/24/21 19:22

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK103  
 Analyst: IVM  
 Analytical Date/Time: 06/24/21 19:22  
 Container ID: 1213521003-A

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 06/23/21 15:38  
 Prep Initial Wt./Vol.: 245 mL  
 Prep Extract Vol: 1 mL

## Results of HOM6-GW

Client Sample ID: **HOM6-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521003  
 Lab Project ID: 1213521

Collection Date: 06/16/21 14:10  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		06/28/21 07:29
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93.8	50-150		%	1		06/28/21 07:29

## Batch Information

Analytical Batch: VFC15681  
 Analytical Method: AK101  
 Analyst: IJV  
 Analytical Date/Time: 06/28/21 07:29  
 Container ID: 1213521003-E

Prep Batch: VXX37317  
 Prep Method: SW5030B  
 Prep Date/Time: 06/27/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



## Results of HOM6-GW

Client Sample ID: **HOM6-GW**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521003  
 Lab Project ID: 1213521

Collection Date: 06/16/21 14:10  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		06/24/21 21:49
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:49
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:49
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/24/21 21:49
Toluene	0.500 U	1.00	0.310	ug/L	1		06/24/21 21:49
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/24/21 21:49
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	1		06/24/21 21:49
4-Bromofluorobenzene (surr)	107	85-114		%	1		06/24/21 21:49
Toluene-d8 (surr)	103	89-112		%	1		06/24/21 21:49

## Batch Information

Analytical Batch: VMS20852  
 Analytical Method: SW8260D  
 Analyst: JMG  
 Analytical Date/Time: 06/24/21 21:49  
 Container ID: 1213521003-G

Prep Batch: VXX37298  
 Prep Method: SW5030B  
 Prep Date/Time: 06/24/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of **FAA-MW-2**

Client Sample ID: **FAA-MW-2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521004  
Lab Project ID: 1213521

Collection Date: 06/16/21 17:25  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0294 J	0.0490	0.0147	ug/L	1		07/07/21 23:04
2-Methylnaphthalene	0.0312 J	0.0490	0.0147	ug/L	1		07/07/21 23:04
Acenaphthene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Acenaphthylene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Anthracene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Benzo(a)Anthracene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Benzo[a]pyrene	0.00980 U	0.0196	0.00608	ug/L	1		07/07/21 23:04
Benzo[b]Fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Benzo[g,h,i]perylene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Benzo[k]fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Chrysene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Dibenzo[a,h]anthracene	0.00980 U	0.0196	0.00608	ug/L	1		07/07/21 23:04
Fluoranthene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Fluorene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Indeno[1,2,3-c,d] pyrene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Naphthalene	0.0468 J	0.0980	0.0304	ug/L	1		07/07/21 23:04
Phenanthrene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
Pyrene	0.0245 U	0.0490	0.0147	ug/L	1		07/07/21 23:04
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	63.3	42-86		%	1		07/07/21 23:04
Fluoranthene-d10 (surr)	68.6	50-97		%	1		07/07/21 23:04

**Batch Information**

Analytical Batch: XMS12724  
Analytical Method: 8270D SIM LV (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/07/21 23:04  
Container ID: 1213521004-C

Prep Batch: XXX45025  
Prep Method: SW3535A  
Prep Date/Time: 06/23/21 15:00  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL



Results of **FAA-MW-2**

Client Sample ID: **FAA-MW-2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521004  
Lab Project ID: 1213521

Collection Date: 06/16/21 17:25  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.523 J	0.588	0.176	mg/L	1		06/24/21 20:33
<b>Surrogates</b>							
5a Androstane (surr)	86.4	50-150		%	1		06/24/21 20:33

**Batch Information**

Analytical Batch: XFC15969  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:33  
Container ID: 1213521004-A

Prep Batch: XXX45027  
Prep Method: SW3520C  
Prep Date/Time: 06/23/21 15:38  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.312 J	0.490	0.147	mg/L	1		06/24/21 20:33
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	98.4	50-150		%	1		06/24/21 20:33

**Batch Information**

Analytical Batch: XFC15969  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:33  
Container ID: 1213521004-A

Prep Batch: XXX45027  
Prep Method: SW3520C  
Prep Date/Time: 06/23/21 15:38  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL



**Results of FAA-MW-2**

Client Sample ID: **FAA-MW-2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521004  
Lab Project ID: 1213521

Collection Date: 06/16/21 17:25  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		06/28/21 07:46
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	92.9	50-150		%	1		06/28/21 07:46

**Batch Information**

Analytical Batch: VFC15681  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/28/21 07:46  
Container ID: 1213521004-E

Prep Batch: VXX37317  
Prep Method: SW5030B  
Prep Date/Time: 06/27/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of **FAA-MW-2**

Client Sample ID: **FAA-MW-2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213521004  
Lab Project ID: 1213521

Collection Date: 06/16/21 17:25  
Received Date: 06/22/21 10:16  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		06/24/21 22:04
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/24/21 22:04
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/24/21 22:04
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/24/21 22:04
Toluene	0.500 U	1.00	0.310	ug/L	1		06/24/21 22:04
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/24/21 22:04
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		06/24/21 22:04
4-Bromofluorobenzene (surr)	106	85-114		%	1		06/24/21 22:04
Toluene-d8 (surr)	102	89-112		%	1		06/24/21 22:04

**Batch Information**

Analytical Batch: VMS20852  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 06/24/21 22:04  
Container ID: 1213521004-G

Prep Batch: VXX37298  
Prep Method: SW5030B  
Prep Date/Time: 06/24/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

## Results of Trip Blanks

Client Sample ID: **Trip Blanks**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521005  
 Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		06/28/21 06:35
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	92.1	50-150		%	1		06/28/21 06:35

## Batch Information

Analytical Batch: VFC15681  
 Analytical Method: AK101  
 Analyst: IJV  
 Analytical Date/Time: 06/28/21 06:35  
 Container ID: 1213521005-A

Prep Batch: VXX37317  
 Prep Method: SW5030B  
 Prep Date/Time: 06/27/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

## Results of Trip Blanks

Client Sample ID: **Trip Blanks**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213521005  
 Lab Project ID: 1213521

Collection Date: 06/16/21 12:20  
 Received Date: 06/22/21 10:16  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		06/24/21 19:50
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/24/21 19:50
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/24/21 19:50
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/24/21 19:50
Toluene	0.500 U	1.00	0.310	ug/L	1		06/24/21 19:50
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/24/21 19:50
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		06/24/21 19:50
4-Bromofluorobenzene (surr)	106	85-114		%	1		06/24/21 19:50
Toluene-d8 (surr)	99.1	89-112		%	1		06/24/21 19:50

## Batch Information

Analytical Batch: VMS20852  
 Analytical Method: SW8260D  
 Analyst: JMG  
 Analytical Date/Time: 06/24/21 19:50  
 Container ID: 1213521005-D

Prep Batch: VXX37298  
 Prep Method: SW5030B  
 Prep Date/Time: 06/24/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1821352 [VXX/37298]  
 Blank Lab ID: 1618731

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1213521001, 1213521002, 1213521003, 1213521004, 1213521005

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	101	81-118		%
4-Bromofluorobenzene (surr)	103	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

## Batch Information

Analytical Batch: VMS20852  
 Analytical Method: SW8260D  
 Instrument: Agilent 7890-75MS  
 Analyst: JMG  
 Analytical Date/Time: 6/24/2021 2:58:00PM

Prep Batch: VXX37298  
 Prep Method: SW5030B  
 Prep Date/Time: 6/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213521 [VXX37298]  
 Blank Spike Lab ID: 1618732  
 Date Analyzed: 06/24/2021 15:13

Spike Duplicate ID: LCSD for HBN 1213521 [VXX37298]  
 Spike Duplicate Lab ID: 1618733  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1213521001, 1213521002, 1213521003, 1213521004, 1213521005

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.9	106	30	31.4	105	( 79-120 )	1.60	(< 20 )
Ethylbenzene	30	30.8	103	30	31.0	103	( 79-121 )	0.66	(< 20 )
o-Xylene	30	30.7	102	30	31.1	104	( 78-122 )	1.30	(< 20 )
P & M -Xylene	60	61.8	103	60	62.4	104	( 80-121 )	1.00	(< 20 )
Toluene	30	30.2	101	30	30.2	101	( 80-121 )	0.00	(< 20 )
Xylenes (total)	90	92.5	103	90	93.6	104	( 79-121 )	1.10	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30		99	30		100	( 81-118 )	0.55	
4-Bromofluorobenzene (surr)	30		102	30		102	( 85-114 )	0.80	
Toluene-d8 (surr)	30		99	30		99	( 89-112 )	0.40	

## Batch Information

Analytical Batch: VMS20852  
 Analytical Method: SW8260D  
 Instrument: Agilent 7890-75MS  
 Analyst: JMG

Prep Batch: VXX37298  
 Prep Method: SW5030B  
 Prep Date/Time: 06/24/2021 06:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1821476 [VXX/37317]  
 Blank Lab ID: 1619372

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1213521001, 1213521002, 1213521003, 1213521004, 1213521005

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	85.5	50-150		%

## Batch Information

Analytical Batch: VFC15681  
 Analytical Method: AK101  
 Instrument: Agilent 7890A PID/FID  
 Analyst: IJV  
 Analytical Date/Time: 6/28/2021 5:23:00AM

Prep Batch: VXX37317  
 Prep Method: SW5030B  
 Prep Date/Time: 6/27/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213521 [VXX37317]  
 Blank Spike Lab ID: 1619373  
 Date Analyzed: 06/28/2021 05:59

Spike Duplicate ID: LCSD for HBN 1213521 [VXX37317]  
 Spike Duplicate Lab ID: 1619374  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1213521001, 1213521002, 1213521003, 1213521004, 1213521005

## Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.03	103	1.00	1.05	105	( 60-120 )	1.70	(< 20 )
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	0.0500		106	0.0500		108	( 50-150 )	1.60	

## Batch Information

Analytical Batch: VFC15681  
 Analytical Method: AK101  
 Instrument: Agilent 7890A PID/FID  
 Analyst: IJV

Prep Batch: VXX37317  
 Prep Method: SW5030B  
 Prep Date/Time: 06/27/2021 06:00  
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1821230 [XXX/45025]

Blank Lab ID: 1618109

QC for Samples:

1213521001, 1213521002, 1213521003, 1213521004

Matrix: Water (Surface, Eff., Ground)

### Results by 8270D SIM LV (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	32.5*	42-86		%
Fluoranthene-d10 (surr)	41.7*	50-97		%

### Batch Information

Analytical Batch: XMS12715  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: LAW  
 Analytical Date/Time: 7/5/2021 10:35:00PM

Prep Batch: XXX45025  
 Prep Method: SW3535A  
 Prep Date/Time: 6/23/2021 3:00:55PM  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL

Print Date: 07/13/2021 4:32:50PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213521 [XXX45025]  
 Blank Spike Lab ID: 1618110  
 Date Analyzed: 07/05/2021 22:56

Spike Duplicate ID: LCSD for HBN 1213521 [XXX45025]  
 Spike Duplicate Lab ID: 1618111  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1213521001, 1213521002, 1213521003, 1213521004

## Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.43	71	2	1.50	75	( 41-115 )	4.60	(< 20 )
2-Methylnaphthalene	2	1.37	69	2	1.38	69	( 39-114 )	0.47	(< 20 )
Acenaphthene	2	1.48	74	2	1.51	75	( 48-114 )	2.10	(< 20 )
Acenaphthylene	2	1.57	79	2	1.52	76	( 35-121 )	3.20	(< 20 )
Anthracene	2	1.61	80	2	1.53	76	( 53-119 )	5.00	(< 20 )
Benzo(a)Anthracene	2	1.57	79	2	1.51	76	( 59-120 )	3.80	(< 20 )
Benzo[a]pyrene	2	1.64	82	2	1.57	78	( 53-120 )	4.70	(< 20 )
Benzo[b]Fluoranthene	2	1.66	83	2	1.62	81	( 53-126 )	2.90	(< 20 )
Benzo[g,h,i]perylene	2	1.71	86	2	1.65	83	( 44-128 )	3.70	(< 20 )
Benzo[k]fluoranthene	2	1.72	86	2	1.63	82	( 54-125 )	5.10	(< 20 )
Chrysene	2	1.66	83	2	1.59	79	( 57-120 )	4.50	(< 20 )
Dibenzo[a,h]anthracene	2	1.68	84	2	1.61	81	( 44-131 )	4.20	(< 20 )
Fluoranthene	2	1.60	80	2	1.55	77	( 58-120 )	3.40	(< 20 )
Fluorene	2	1.61	81	2	1.55	77	( 50-118 )	4.00	(< 20 )
Indeno[1,2,3-c,d] pyrene	2	1.64	82	2	1.59	79	( 48-130 )	3.40	(< 20 )
Naphthalene	2	1.38	69	2	1.42	71	( 43-114 )	3.00	(< 20 )
Phenanthrene	2	1.63	81	2	1.58	79	( 53-115 )	3.10	(< 20 )
Pyrene	2	1.57	78	2	1.54	77	( 53-121 )	2.10	(< 20 )

## Surrogates

2-Methylnaphthalene-d10 (surr)	2		64	2		68	( 42-86 )	6.20	
Fluoranthene-d10 (surr)	2		78	2		78	( 50-97 )	0.23	

## Batch Information

Analytical Batch: XMS12715  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: LAW

Prep Batch: XXX45025  
 Prep Method: SW3535A  
 Prep Date/Time: 06/23/2021 15:00  
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

## Method Blank

Blank ID: MB for HBN 1821247 [XXX/45027]  
 Blank Lab ID: 1618204

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1213521001, 1213521002, 1213521003, 1213521004

## Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.189J	0.600	0.180	mg/L
<b>Surrogates</b>				
5a Androstane (surr)	94.7	60-120		%

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK102  
 Instrument: Agilent 7890B R  
 Analyst: IVM  
 Analytical Date/Time: 6/24/2021 5:41:00PM

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 6/23/2021 3:38:31PM  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL

Print Date: 07/13/2021 4:32:55PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213521 [XXX45027]  
 Blank Spike Lab ID: 1618205  
 Date Analyzed: 06/24/2021 16:20

Spike Duplicate ID: LCSD for HBN 1213521 [XXX45027]  
 Spike Duplicate Lab ID: 1618206  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1213521001, 1213521002, 1213521003, 1213521004

## Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	18.7	93	20	18.9	95	( 75-125 )	1.40	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	0.4		97	0.4		101	( 60-120 )	3.90	

## Batch Information

Analytical Batch: **XFC15969**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX45027**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **06/23/2021 15:38**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

## Method Blank

Blank ID: MB for HBN 1821247 [XXX/45027]  
 Blank Lab ID: 1618204

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1213521001, 1213521002, 1213521003, 1213521004

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	113	60-120		%

## Batch Information

Analytical Batch: XFC15969  
 Analytical Method: AK103  
 Instrument: Agilent 7890B R  
 Analyst: IVM  
 Analytical Date/Time: 6/24/2021 5:41:00PM

Prep Batch: XXX45027  
 Prep Method: SW3520C  
 Prep Date/Time: 6/23/2021 3:38:31PM  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL

Print Date: 07/13/2021 4:33:00PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213521 [XXX45027]  
 Blank Spike Lab ID: 1618205  
 Date Analyzed: 06/24/2021 16:20

Spike Duplicate ID: LCSD for HBN 1213521 [XXX45027]  
 Spike Duplicate Lab ID: 1618206  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1213521001, 1213521002, 1213521003, 1213521004

## Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	18.5	93	20	18.8	94	( 60-120 )	1.80	(< 20 )

### Surrogates

n-Triacontane-d62 (surr)	0.4	100	0.4	108	( 60-120 )	7.70
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## Batch Information

Analytical Batch: **XFC15969**  
 Analytical Method: **AK103**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX45027**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **06/23/2021 15:38**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 07/13/2021 4:33:02PM

# CHAIN-OF-CUSTODY RECORD

Analytical Methods (include preservative if used)

Turn Around Time:  
 Normal  Rush  
 Please Specify \_\_\_\_\_

Quote No: \_\_\_\_\_  
 MSA Number: ASA-SGS-2016  
 J-Flags:  Yes  No

1213521  


Sample Identity	Lab No.	Time Sampled	Date Sampled	Total	Remarks/matrix Composition/Grab? Sample Containers
HOM5-GW	<u>1A7</u>	12:30	6/16/21	<u>10</u>	Groundwater sample
HOM5P-GW	<u>1A5</u>	12:20			
HOM6-GW	<u>5A3</u>	14:10			
FAA-MW-2	<u>4A2</u>	17:25			
Trip Blanks	<u>SAP</u>				
					MED, 6/18

Relinquished By:	1.	2.	3.
Signature:	<u>Adam Wyborny</u>	<u>William Hunt</u>	_____
Printed Name:	<u>Adam Wyborny</u>	<u>William Hunt</u>	_____
Company:	<u>Shannon &amp; Wilson, Inc.</u>	_____	_____
Signature:	<u>William Hunt</u>	<u>William Hunt</u>	_____
Printed Name:	<u>William Hunt</u>	<u>William Hunt</u>	_____
Company:	_____	_____	_____
Signature:	_____	_____	_____
Printed Name:	_____	_____	_____
Company:	_____	_____	_____

**Project Information**  
 Number: 106031  
 Name: Homer Airport PFAS  
 Contact: Ashley Jaramillo  
 Ongoing Project? Yes  No   
 Sampler: APW, MED

**Sample Receipt**  
 Total No. of Containers: 40  
 COC Seals/Intact? Y/N/A  
 Received Good Cond./Cold Good  
 Temp: 2.9  
 Delivery Method: Hand Delivery

**Notes:**  
 GRO, DRO, RRO, and BTEX samples are HCL preserved

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file



e-Sample Receipt Form FBK

SGS Workorder #:

S&W W

S&W W

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
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Chain of Custody / Temperature Requirements	Yes	Exemption permitted if sampler hand carries/delivers.
---	-----	---

Were Custody Seals intact? Note # & location	N/A	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	

<input type="checkbox"/> **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 type="checkbox"/> <p style="font-size: small;">If samples received without a temperature blank, the "cooler temperature" will be documented instead &amp; "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.</p>	Yes	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%;">Cooler ID:</td> <td style="width:15%; text-align: center;">1</td> <td style="width:5%; text-align: center;">@</td> <td style="width:10%; text-align: center;">2.9</td> <td style="width:10%;">°C</td> <td style="width:10%;">Therm. ID:</td> <td style="width:10%; text-align: center;">D21</td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td style="text-align: center;">@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td style="text-align: center;">@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td style="text-align: center;">@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> </table>	Cooler ID:	1	@	2.9	°C	Therm. ID:	D21	Cooler ID:		@		°C	Therm. ID:		Cooler ID:		@		°C	Therm. ID:		Cooler ID:		@		°C	Therm. ID:	
Cooler ID:	1	@	2.9	°C	Therm. ID:	D21																								
Cooler ID:		@		°C	Therm. ID:																									
Cooler ID:		@		°C	Therm. ID:																									
Cooler ID:		@		°C	Therm. ID:																									

\*If >6°C, were samples collected <8 hours ago?

If <0°C, were sample containers ice free?

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.
--	--

Do samples match COC\*\* (i.e., sample IDs, dates/times collected)?  N/C

\*\*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 samples in good condition (no leaks/cracks/breakage)?  Yes

Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))  Yes

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/C

Were all soil VOAs field extracted with MeOH+BFB?  N/A

For Rush/Short Hold Time, was RUSH/Short HT email sent?  Yes PAHs break hold 6/23

**Note to Client:** Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

<b>SGS Profile #</b>	<b>364503</b>	364503
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e-Sample Receipt Form

SGS Workorder #:

1213521

1213521

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		
Were Custody Seals intact? Note # & location	N/A	N/A Exemption permitted if sampler hand carries/delivers.
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
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.	Yes	Cooler ID: 1 @ 2.1 °C Therm. ID: D52
		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.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		
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)?	No	Sample 4 COC and container labels do not match. Proceeded with COC identifier. PM Notified.
**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	N/A ***Exemption permitted for metals (e.g.200.8/6020B).
<b>Volatile / LL-Hg Requirements</b>		
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)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
<b>Note to Client:</b> 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>
1213521001-A	HCL to pH < 2	OK			
1213521001-B	HCL to pH < 2	OK			
1213521001-C	No Preservative Required	OK			
1213521001-D	No Preservative Required	OK			
1213521001-E	HCL to pH < 2	OK			
1213521001-F	HCL to pH < 2	OK			
1213521001-G	HCL to pH < 2	OK			
1213521001-H	HCL to pH < 2	OK			
1213521001-I	HCL to pH < 2	OK			
1213521001-J	HCL to pH < 2	OK			
1213521002-A	HCL to pH < 2	OK			
1213521002-B	HCL to pH < 2	OK			
1213521002-C	No Preservative Required	OK			
1213521002-D	No Preservative Required	OK			
1213521002-E	HCL to pH < 2	OK			
1213521002-F	HCL to pH < 2	OK			
1213521002-G	HCL to pH < 2	OK			
1213521002-H	HCL to pH < 2	OK			
1213521002-I	HCL to pH < 2	OK			
1213521002-J	HCL to pH < 2	OK			
1213521003-A	HCL to pH < 2	OK			
1213521003-B	HCL to pH < 2	OK			
1213521003-C	No Preservative Required	OK			
1213521003-D	No Preservative Required	OK			
1213521003-E	HCL to pH < 2	OK			
1213521003-F	HCL to pH < 2	OK			
1213521003-G	HCL to pH < 2	OK			
1213521003-H	HCL to pH < 2	OK			
1213521003-I	HCL to pH < 2	OK			
1213521003-J	HCL to pH < 2	OK			
1213521004-A	HCL to pH < 2	OK			
1213521004-B	HCL to pH < 2	OK			
1213521004-C	No Preservative Required	OK			
1213521004-D	No Preservative Required	OK			
1213521004-E	HCL to pH < 2	OK			
1213521004-F	HCL to pH < 2	OK			
1213521004-G	HCL to pH < 2	OK			
1213521004-H	HCL to pH < 2	OK			
1213521004-I	HCL to pH < 2	OK			
1213521004-J	HCL to pH < 2	OK			
1213521005-A	HCL to pH < 2	OK			
1213521005-B	HCL to pH < 2	OK			
1213521005-C	HCL to pH < 2	OK			
1213521005-D	HCL to pH < 2	OK			
1213521005-E	HCL to pH < 2	OK			
1213521005-F	HCL to pH < 2	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 Data Review Checklist**

Completed By:

Adam Wyborny, PE

Title:

Environmental Engineer

Date:

July 14, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1213521

Laboratory Report Date:

July 13, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

ADEC File Number:

2314.38.042

Hazard Identification Number:

27309

1213521

Laboratory Report Date:

July 13, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

**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:

All analyses were performed by the SGS North America, Inc. (SGS) laboratory in Anchorage, AK. SGS has been approved by the DEC CS program for the requested analyses.

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:

The samples were not transferred to a network laboratory.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:



1213521

Laboratory Report Date:

July 13, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The sample receipt form notes that the samples arrived in good condition and properly preserved.

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:

A minor discrepancy was noted between the ID listed on the container and the COC for sample *FAA-MW-2*. The sample was logged in per the COC. The results were not affected by this discrepancy.

e. Data quality or usability affected?

Comments:

The data quality/usability is not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The recoveries of the polynuclear aromatic hydrocarbon (PAH) surrogates 2-methylnaphthalene-d10 and fluoranthene-d10 were outside of laboratory control limits in the field samples *HOM5-GW*, *HOM6-GW*, and the method blank sample associated with preparation batch XXX45025. Contrary to the case narrative, sample *HOM5-GW* does not appear to be affected by surrogate recovery failures.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

The field samples *HOM5-GW* and *HOM6-GW* were re-extracted outside of the method required holding time to confirm the results of the initial run. According to the laboratory, the results were confirmed, and the in-hold data are reported.

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify an effect on data quality/usability. See section 6.d for further assessment.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Soil samples were not submitted with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

The data quality/usability is not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

However, diesel range organics (DRO) were detected at an estimated concentration in the method blank sample associated with preparation batch XXX45027.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

All field samples reported in this work order contained DRO concentrations within 5x that of the concentration detected in the method blank. The DRO results may be affected by, or the product of, laboratory contamination.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

The DRO results of samples *HOM5-GW*, *HOM5D-GW*, *HOM6-GW*, and *FAA-MW-2* are considered not detected and are instead reported at the LOQ. These results are flagged 'UB' to identify the possible laboratory contamination.

v. Data quality or usability affected?

Comments:

The data quality/usability is affected; see above.

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:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/Inorganics analyses were not requested with this work order.

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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:

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No samples are affected. Method accuracy and precision were demonstrated to be within acceptable limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

Qualification of the results was not required; see section 6.b.v above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability is 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:

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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:

The recoveries of the PAH surrogates 2-methylnaphthalene-d10 and fluoranthene-d10 were grossly below (<20%) the laboratory’s lower control limits in the field sample *HOM6-GW*. However, the method blank sample associated with preparatory batch XXX45025 also had low recoveries for these surrogates, indicating it was not likely a matrix issue that resulted in the recovery failures but rather a laboratory QC issue. This is further supported by the out-of-hold re-extraction results confirming the initial extraction results.

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:

PAHs were not detected in the sample *HOM6-GW*. We consider the PAH results of this sample to be estimated non-detections and the results are flagged ‘UJ’ for reporting purposes.

iv. Data quality or usability affected?

Comments:

The data quality is affected; see above.

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:

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:

However, the samples were transported in a single cooler and the laboratory noted that the trip blank was with the VOA samples. The sample results are not affected by this omission.

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

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iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; target analytes were not detected in the trip blank sample included with this work order.

v. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

The field duplicate samples *HOM5-GW* and *HOM5D-GW* were submitted with this sample batch. While not explicitly identified as a duplicate on the COC, the labeling convention for the duplicate sample was not discrete enough for the sample to be considered "blind."

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

The relative precision demonstrated between the detected results of the field duplicate samples met the recommended DQO of 30%, where calculable, except for phenanthrene and residual range organics (RRO).

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The phenanthrene and RRO results of the samples *HOM5-GW* and *HOM5D-GW* are considered estimated and flagged 'J' to identify the imprecision.

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g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Samples for this project were not collected with reusable equipment. There is therefore no practical potential for analyte contributions attributable to equipment-based sample cross-contamination.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

An equipment blank was not submitted with this work order.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

No additional data flags/qualifiers are required.





## Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks  
2355 Hill Road  
Fairbanks, AK 99709  
(907)458-3118

Report Number: **1213523**

Client Project: **106031 Homer Airport PFAS**

Dear Ashley Jaramillo,

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 Jennifer 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.

---

Jennifer Dawkins  
Project Manager  
Jennifer.Dawkins@sgs.com

Date

## Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**  
SGS Project: **1213523**  
Project Name/Site: **106031 Homer Airport PFAS**  
Project Contact: **Ashley Jaramillo**

Refer to sample receipt form for information on sample condition.

### **HOM5-SS (1213523001) PS**

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

### **LCS for HBN 1821483 [VXX/37321 (1619395) LCS**

AK101 - LCS recovery for GRO biased high, however this analyte was not detected above the LOQ in the associated samples.

### **LCSD for HBN 1821483 [VXX/3732 (1619396) LCSD**

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.

\*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: 07/22/2021 1:33:48PM

### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 DW Chemistry (Provisionally Certified as of 05/27/2021 for Mercury by EPA200.8, Nitrate as N by SM 4500NO3-F and VOCs by EPA 524.2) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
HOM5-SS	1213523001	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM5-SUB1	1213523002	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM5-SUB2	1213523003	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM6-SS	1213523004	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM6-SUB1	1213523005	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM6D-SUB1	1213523006	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM6-SUB2	1213523007	06/15/2021	06/22/2021	Soil/Solid (dry weight)
HOM11-SUB1	1213523008	06/14/2021	06/22/2021	Soil/Solid (dry weight)
HOM11-SUB2	1213523009	06/14/2021	06/22/2021	Soil/Solid (dry weight)
Trip Blank	1213523010	06/14/2021	06/22/2021	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	Volatile Organic Compounds (S) FIELD EXT

### Detectable Results Summary

Client Sample ID: **HOM5-SS**

Lab Sample ID: 1213523001

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	450	mg/kg
Residual Range Organics	5000	mg/kg

Client Sample ID: **HOM5-SUB1**

Lab Sample ID: 1213523002

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	16.5J	mg/kg
Residual Range Organics	68.5J	mg/kg

Client Sample ID: **HOM5-SUB2**

Lab Sample ID: 1213523003

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	13.5J	mg/kg
Residual Range Organics	58.6J	mg/kg
Gasoline Range Organics	1.15J	mg/kg

**Volatile Fuels**

Client Sample ID: **HOM6-SS**

Lab Sample ID: 1213523004

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	21.7J	mg/kg
Residual Range Organics	190	mg/kg
Gasoline Range Organics	2.33J	mg/kg

**Volatile Fuels**

Client Sample ID: **HOM6-SUB1**

Lab Sample ID: 1213523005

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	18.3J	mg/kg
Residual Range Organics	96.5J	mg/kg
Gasoline Range Organics	1.28J	mg/kg

**Volatile Fuels**

Client Sample ID: **HOM6D-SUB1**

Lab Sample ID: 1213523006

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	17.2J	mg/kg
Residual Range Organics	82.9J	mg/kg

Client Sample ID: **HOM6-SUB2**

Lab Sample ID: 1213523007

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	18.9J	mg/kg
Residual Range Organics	81.3J	mg/kg

Client Sample ID: **HOM11-SUB1**

Lab Sample ID: 1213523008

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	13.4J	mg/kg
Gasoline Range Organics	2.26J	mg/kg

**Volatile Fuels**

Client Sample ID: **HOM11-SUB2**

Lab Sample ID: 1213523009

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	18.7J	mg/kg
Residual Range Organics	81.3J	mg/kg

Client Sample ID: **Trip Blank**

Lab Sample ID: 1213523010

**Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.918J	mg/kg



Results of **HOM5-SS**

Client Sample ID: **HOM5-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523001  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:25  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):57.9  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
2-Methylnaphthalene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Acenaphthene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Acenaphthylene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Anthracene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Benzo(a)Anthracene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Benzo[a]pyrene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Benzo[b]Fluoranthene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Benzo[g,h,i]perylene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Benzo[k]fluoranthene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Chrysene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Dibenzo[a,h]anthracene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Fluoranthene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Fluorene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Indeno[1,2,3-c,d] pyrene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Naphthalene	0.0855 U	0.171	0.0429	mg/kg	5		07/07/21 23:45
Phenanthrene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
Pyrene	0.107 U	0.214	0.0536	mg/kg	5		07/07/21 23:45
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	70.3	58-103		%	5		07/07/21 23:45
Fluoranthene-d10 (surr)	74.2	54-113		%	5		07/07/21 23:45

**Batch Information**

Analytical Batch: XMS12724  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/07/21 23:45  
Container ID: 1213523001-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.652 g  
Prep Extract Vol: 5 mL



Results of **HOM5-SS**

Client Sample ID: **HOM5-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523001  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:25  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):57.9  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	450		137	42.4	mg/kg	4		06/25/21 00:49
<b>Surrogates</b>								
5a Androstane (surr)	97.8		50-150		%	4		06/25/21 00:49

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/25/21 00:49  
Container ID: 1213523001-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.264 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	5000		684	294	mg/kg	4		06/25/21 00:49
<b>Surrogates</b>								
n-Triacontane-d62 (surr)	81.8		50-150		%	4		06/25/21 00:49

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/25/21 00:49  
Container ID: 1213523001-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.264 g  
Prep Extract Vol: 5 mL

## Results of HOM5-SS

Client Sample ID: **HOM5-SS**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523001  
 Lab Project ID: 1213523

Collection Date: 06/15/21 13:25  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):57.9  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	7.70 U	15.4	4.63	mg/kg	1		06/29/21 01:18
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	80.6	50-150		%	1		06/29/21 01:18

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 01:18  
 Container ID: 1213523001-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 13:25  
 Prep Initial Wt./Vol.: 18.294 g  
 Prep Extract Vol: 32.6956 mL





**Results of HOM5-SS**

Client Sample ID: **HOM5-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523001  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:25  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):57.9  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0386 U	0.0771	0.0241	mg/kg	1		06/24/21 17:11
Ethylbenzene	0.0770 U	0.154	0.0481	mg/kg	1		06/24/21 17:11
o-Xylene	0.0770 U	0.154	0.0481	mg/kg	1		06/24/21 17:11
P & M -Xylene	0.154 U	0.308	0.0925	mg/kg	1		06/24/21 17:11
Toluene	0.0770 U	0.154	0.0481	mg/kg	1		06/24/21 17:11
Xylenes (total)	0.232 U	0.463	0.141	mg/kg	1		06/24/21 17:11
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	117	71-136		%	1		06/24/21 17:11
4-Bromofluorobenzene (surr)	60.9	55-151		%	1		06/24/21 17:11
Toluene-d8 (surr)	101	85-116		%	1		06/24/21 17:11

**Batch Information**

Analytical Batch: VMS20847  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/24/21 17:11  
Container ID: 1213523001-B

Prep Batch: VXX37293  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 13:25  
Prep Initial Wt./Vol.: 18.294 g  
Prep Extract Vol: 32.6956 mL



Results of **HOM5-SUB1**

Client Sample ID: **HOM5-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523002  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:45  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
2-Methylnaphthalene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Acenaphthene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Acenaphthylene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Anthracene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Benzo(a)Anthracene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Benzo[a]pyrene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Benzo[b]Fluoranthene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Benzo[g,h,i]perylene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Benzo[k]fluoranthene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Chrysene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Dibenzo[a,h]anthracene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Fluoranthene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Fluorene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Indeno[1,2,3-c,d] pyrene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Naphthalene	0.0115 U	0.0229	0.00573	mg/kg	1		07/08/21 00:05
Phenanthrene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
Pyrene	0.0143 U	0.0286	0.00716	mg/kg	1		07/08/21 00:05
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	78	58-103		%	1		07/08/21 00:05
Fluoranthene-d10 (surr)	80.2	54-113		%	1		07/08/21 00:05

**Batch Information**

Analytical Batch: XMS12724  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/08/21 00:05  
Container ID: 1213523002-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.588 g  
Prep Extract Vol: 5 mL



Results of **HOM5-SUB1**

Client Sample ID: **HOM5-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523002  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:45  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	16.5 J	22.9	7.11	mg/kg	1		06/24/21 20:13
<b>Surrogates</b>							
5a Androstane (surr)	101	50-150		%	1		06/24/21 20:13

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:13  
Container ID: 1213523002-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.099 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	68.5 J	115	49.3	mg/kg	1		06/24/21 20:13
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	113	50-150		%	1		06/24/21 20:13

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:13  
Container ID: 1213523002-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.099 g  
Prep Extract Vol: 5 mL

## Results of HOM5-SUB1

Client Sample ID: **HOM5-SUB1**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523002  
 Lab Project ID: 1213523

Collection Date: 06/15/21 13:45  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):87.0  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.52 U	5.04	1.51	mg/kg	1		06/29/21 01:36
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	115	50-150		%	1		06/29/21 01:36

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 01:36  
 Container ID: 1213523002-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 13:45  
 Prep Initial Wt./Vol.: 33.489 g  
 Prep Extract Vol: 29.3692 mL



**Results of HOM5-SUB1**

Client Sample ID: **HOM5-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523002  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:45  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0126 U	0.0252	0.00787	mg/kg	1		06/24/21 17:28
Ethylbenzene	0.0252 U	0.0504	0.0157	mg/kg	1		06/24/21 17:28
o-Xylene	0.0252 U	0.0504	0.0157	mg/kg	1		06/24/21 17:28
P & M -Xylene	0.0505 U	0.101	0.0303	mg/kg	1		06/24/21 17:28
Toluene	0.0252 U	0.0504	0.0157	mg/kg	1		06/24/21 17:28
Xylenes (total)	0.0755 U	0.151	0.0460	mg/kg	1		06/24/21 17:28
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		06/24/21 17:28
4-Bromofluorobenzene (surr)	84	55-151		%	1		06/24/21 17:28
Toluene-d8 (surr)	101	85-116		%	1		06/24/21 17:28

**Batch Information**

Analytical Batch: VMS20847  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/24/21 17:28  
Container ID: 1213523002-B

Prep Batch: VXX37293  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 13:45  
Prep Initial Wt./Vol.: 33.489 g  
Prep Extract Vol: 29.3692 mL



Results of **HOM5-SUB2**

Client Sample ID: **HOM5-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523003  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:50  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.5  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
2-Methylnaphthalene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Acenaphthene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Acenaphthylene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Anthracene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Benzo(a)Anthracene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Benzo[a]pyrene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Benzo[b]Fluoranthene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Benzo[g,h,i]perylene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Benzo[k]fluoranthene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Chrysene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Dibenzo[a,h]anthracene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Fluoranthene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Fluorene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Indeno[1,2,3-c,d] pyrene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Naphthalene	0.0108 U	0.0215	0.00538	mg/kg	1		07/14/21 20:00
Phenanthrene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
Pyrene	0.0135 U	0.0269	0.00672	mg/kg	1		07/14/21 20:00
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	75.5	58-103		%	1		07/14/21 20:00
Fluoranthene-d10 (surr)	76.3	54-113		%	1		07/14/21 20:00

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 20:00  
Container ID: 1213523003-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.877 g  
Prep Extract Vol: 5 mL



Results of **HOM5-SUB2**

Client Sample ID: **HOM5-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523003  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:50  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.5  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	13.5 J	21.7	6.73	mg/kg	1		06/24/21 20:33

**Surrogates**

5a Androstane (surr)	89.5	50-150		%	1		06/24/21 20:33
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**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:33  
Container ID: 1213523003-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.222 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	58.6 J	109	46.7	mg/kg	1		06/24/21 20:33

**Surrogates**

n-Triacontane-d62 (surr)	97.7	50-150		%	1		06/24/21 20:33
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**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:33  
Container ID: 1213523003-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.222 g  
Prep Extract Vol: 5 mL

## Results of HOM5-SUB2

Client Sample ID: **HOM5-SUB2**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523003  
 Lab Project ID: 1213523

Collection Date: 06/15/21 13:50  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.5  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.15 J	2.68	0.803	mg/kg	1		06/29/21 01:54
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	103	50-150		%	1		06/29/21 01:54

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 01:54  
 Container ID: 1213523003-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 13:50  
 Prep Initial Wt./Vol.: 61.911 g  
 Prep Extract Vol: 30.2915 mL





**Results of HOM5-SUB2**

Client Sample ID: **HOM5-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523003  
Lab Project ID: 1213523

Collection Date: 06/15/21 13:50  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.5  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00670 U	0.0134	0.00417	mg/kg	1		06/24/21 17:44
Ethylbenzene	0.0134 U	0.0268	0.00835	mg/kg	1		06/24/21 17:44
o-Xylene	0.0134 U	0.0268	0.00835	mg/kg	1		06/24/21 17:44
P & M -Xylene	0.0267 U	0.0535	0.0161	mg/kg	1		06/24/21 17:44
Toluene	0.0134 U	0.0268	0.00835	mg/kg	1		06/24/21 17:44
Xylenes (total)	0.0401 U	0.0803	0.0244	mg/kg	1		06/24/21 17:44
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		06/24/21 17:44
4-Bromofluorobenzene (surr)	79.6	55-151		%	1		06/24/21 17:44
Toluene-d8 (surr)	100	85-116		%	1		06/24/21 17:44

**Batch Information**

Analytical Batch: VMS20847  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/24/21 17:44  
Container ID: 1213523003-B

Prep Batch: VXX37293  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 13:50  
Prep Initial Wt./Vol.: 61.911 g  
Prep Extract Vol: 30.2915 mL



Results of **HOM6-SS**

Client Sample ID: **HOM6-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523004  
Lab Project ID: 1213523

Collection Date: 06/15/21 14:38  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):81.1  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
2-Methylnaphthalene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Acenaphthene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Acenaphthylene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Anthracene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Benzo(a)Anthracene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Benzo[a]pyrene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Benzo[b]Fluoranthene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Benzo[g,h,i]perylene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Benzo[k]fluoranthene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Chrysene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Dibenzo[a,h]anthracene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Fluoranthene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Fluorene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Indeno[1,2,3-c,d] pyrene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Naphthalene	0.0123 U	0.0246	0.00616	mg/kg	1		07/14/21 20:21
Phenanthrene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
Pyrene	0.0154 U	0.0308	0.00770	mg/kg	1		07/14/21 20:21
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	79	58-103		%	1		07/14/21 20:21
Fluoranthene-d10 (surr)	81.1	54-113		%	1		07/14/21 20:21

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 20:21  
Container ID: 1213523004-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.514 g  
Prep Extract Vol: 5 mL



Results of **HOM6-SS**

Client Sample ID: **HOM6-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523004  
Lab Project ID: 1213523

Collection Date: 06/15/21 14:38  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):81.1  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.7 J	24.6	7.62	mg/kg	1		06/24/21 20:44
<b>Surrogates</b>							
5a Androstane (surr)	85.4	50-150		%	1		06/24/21 20:44

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:44  
Container ID: 1213523004-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.101 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	190	123	52.8	mg/kg	1		06/24/21 20:44
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	87	50-150		%	1		06/24/21 20:44

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:44  
Container ID: 1213523004-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.101 g  
Prep Extract Vol: 5 mL

## Results of HOM6-SS

Client Sample ID: **HOM6-SS**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523004  
 Lab Project ID: 1213523

Collection Date: 06/15/21 14:38  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):81.1  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.33 J	6.48	1.94	mg/kg	1		06/29/21 02:12
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	122	50-150		%	1		06/29/21 02:12

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 02:12  
 Container ID: 1213523004-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 14:38  
 Prep Initial Wt./Vol.: 28.977 g  
 Prep Extract Vol: 30.4689 mL



**Results of HOM6-SS**

Client Sample ID: **HOM6-SS**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523004  
Lab Project ID: 1213523

Collection Date: 06/15/21 14:38  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):81.1  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0162 U	0.0324	0.0101	mg/kg	1		06/24/21 18:35
Ethylbenzene	0.0324 U	0.0648	0.0202	mg/kg	1		06/24/21 18:35
o-Xylene	0.0324 U	0.0648	0.0202	mg/kg	1		06/24/21 18:35
P & M -Xylene	0.0650 U	0.130	0.0389	mg/kg	1		06/24/21 18:35
Toluene	0.0324 U	0.0648	0.0202	mg/kg	1		06/24/21 18:35
Xylenes (total)	0.0970 U	0.194	0.0591	mg/kg	1		06/24/21 18:35

**Surrogates**

1,2-Dichloroethane-D4 (surr)	104	71-136		%	1		06/24/21 18:35
4-Bromofluorobenzene (surr)	96.2	55-151		%	1		06/24/21 18:35
Toluene-d8 (surr)	99.8	85-116		%	1		06/24/21 18:35

**Batch Information**

Analytical Batch: VMS20848  
Analytical Method: SW8260D  
Analyst: MDT  
Analytical Date/Time: 06/24/21 18:35  
Container ID: 1213523004-B

Prep Batch: VXX37294  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 14:38  
Prep Initial Wt./Vol.: 28.977 g  
Prep Extract Vol: 30.4689 mL



Results of **HOM6-SUB1**

Client Sample ID: **HOM6-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523005  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.6  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
2-Methylnaphthalene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Acenaphthene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Acenaphthylene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Anthracene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Benzo(a)Anthracene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Benzo[a]pyrene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Benzo[b]Fluoranthene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Benzo[g,h,i]perylene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Benzo[k]fluoranthene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Chrysene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Dibenzo[a,h]anthracene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Fluoranthene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Fluorene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Indeno[1,2,3-c,d] pyrene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Naphthalene	0.0116 U	0.0232	0.00581	mg/kg	1		07/14/21 20:41
Phenanthrene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
Pyrene	0.0145 U	0.0290	0.00726	mg/kg	1		07/14/21 20:41
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	73.4	58-103		%	1		07/14/21 20:41
Fluoranthene-d10 (surr)	73.5	54-113		%	1		07/14/21 20:41

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 20:41  
Container ID: 1213523005-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.643 g  
Prep Extract Vol: 5 mL



Results of **HOM6-SUB1**

Client Sample ID: **HOM6-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523005  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.6  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	18.3 J	23.2	7.19	mg/kg	1		06/24/21 20:54
<b>Surrogates</b>							
5a Androstane (surr)	83.1	50-150		%	1		06/24/21 20:54

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:54  
Container ID: 1213523005-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.235 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	96.5 J	116	49.9	mg/kg	1		06/24/21 20:54
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	82.5	50-150		%	1		06/24/21 20:54

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 20:54  
Container ID: 1213523005-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.235 g  
Prep Extract Vol: 5 mL



**Results of HOM6-SUB1**

Client Sample ID: **HOM6-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523005  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.6  
Location:

**Results by Volatile Fuels**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.28 J	4.16	1.25	mg/kg	1		06/29/21 03:05
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	105	50-150		%	1		06/29/21 03:05

**Batch Information**

Analytical Batch: VFC15679  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 06/29/21 03:05  
Container ID: 1213523005-B

Prep Batch: VXX37321  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 15:00  
Prep Initial Wt./Vol.: 43.972 g  
Prep Extract Vol: 31.3404 mL





**Results of HOM6-SUB1**

Client Sample ID: **HOM6-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523005  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.6  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0104 U	0.0208	0.00650	mg/kg	1		06/24/21 18:50
Ethylbenzene	0.0208 U	0.0416	0.0130	mg/kg	1		06/24/21 18:50
o-Xylene	0.0208 U	0.0416	0.0130	mg/kg	1		06/24/21 18:50
P & M -Xylene	0.0417 U	0.0833	0.0250	mg/kg	1		06/24/21 18:50
Toluene	0.0208 U	0.0416	0.0130	mg/kg	1		06/24/21 18:50
Xylenes (total)	0.0625 U	0.125	0.0380	mg/kg	1		06/24/21 18:50
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		06/24/21 18:50
4-Bromofluorobenzene (surr)	89.6	55-151		%	1		06/24/21 18:50
Toluene-d8 (surr)	101	85-116		%	1		06/24/21 18:50

**Batch Information**

Analytical Batch: VMS20848  
Analytical Method: SW8260D  
Analyst: MDT  
Analytical Date/Time: 06/24/21 18:50  
Container ID: 1213523005-B

Prep Batch: VXX37294  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 15:00  
Prep Initial Wt./Vol.: 43.972 g  
Prep Extract Vol: 31.3404 mL



Results of **HOM6D-SUB1**

Client Sample ID: **HOM6D-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523006  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
2-Methylnaphthalene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Acenaphthene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Acenaphthylene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Anthracene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Benzo(a)Anthracene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Benzo[a]pyrene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Benzo[b]Fluoranthene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Benzo[g,h,i]perylene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Benzo[k]fluoranthene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Chrysene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Dibenzo[a,h]anthracene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Fluoranthene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Fluorene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Indeno[1,2,3-c,d] pyrene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Naphthalene	0.0115 U	0.0229	0.00572	mg/kg	1		07/14/21 21:01
Phenanthrene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
Pyrene	0.0143 U	0.0286	0.00715	mg/kg	1		07/14/21 21:01
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	74.7	58-103		%	1		07/14/21 21:01
Fluoranthene-d10 (surr)	76	54-113		%	1		07/14/21 21:01

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 21:01  
Container ID: 1213523006-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.62 g  
Prep Extract Vol: 5 mL



Results of **HOM6D-SUB1**

Client Sample ID: **HOM6D-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523006  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	17.2 J	23.0	7.13	mg/kg	1		06/24/21 21:04
<b>Surrogates</b>							
5a Androstane (surr)	76	50-150		%	1		06/24/21 21:04

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:04  
Container ID: 1213523006-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.003 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	82.9 J	115	49.4	mg/kg	1		06/24/21 21:04
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	77.1	50-150		%	1		06/24/21 21:04

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:04  
Container ID: 1213523006-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.003 g  
Prep Extract Vol: 5 mL

## Results of HOM6D-SUB1

Client Sample ID: **HOM6D-SUB1**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523006  
 Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):87.0  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.44 U	4.89	1.47	mg/kg	1		06/29/21 03:23
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	101	50-150		%	1		06/29/21 03:23

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 03:23  
 Container ID: 1213523006-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 15:00  
 Prep Initial Wt./Vol.: 34.647 g  
 Prep Extract Vol: 29.5035 mL



**Results of HOM6D-SUB1**

Client Sample ID: **HOM6D-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523006  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:00  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.0  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0123 U	0.0245	0.00763	mg/kg	1		06/24/21 19:06
Ethylbenzene	0.0245 U	0.0489	0.0153	mg/kg	1		06/24/21 19:06
o-Xylene	0.0245 U	0.0489	0.0153	mg/kg	1		06/24/21 19:06
P & M -Xylene	0.0490 U	0.0979	0.0294	mg/kg	1		06/24/21 19:06
Toluene	0.0245 U	0.0489	0.0153	mg/kg	1		06/24/21 19:06
Xylenes (total)	0.0735 U	0.147	0.0446	mg/kg	1		06/24/21 19:06
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		06/24/21 19:06
4-Bromofluorobenzene (surr)	89.3	55-151		%	1		06/24/21 19:06
Toluene-d8 (surr)	101	85-116		%	1		06/24/21 19:06

**Batch Information**

Analytical Batch: VMS20848  
Analytical Method: SW8260D  
Analyst: MDT  
Analytical Date/Time: 06/24/21 19:06  
Container ID: 1213523006-B

Prep Batch: VXX37294  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 15:00  
Prep Initial Wt./Vol.: 34.647 g  
Prep Extract Vol: 29.5035 mL



Results of **HOM6-SUB2**

Client Sample ID: **HOM6-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523007  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:10  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.3  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
2-Methylnaphthalene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Acenaphthene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Acenaphthylene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Anthracene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Benzo(a)Anthracene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Benzo[a]pyrene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Benzo[b]Fluoranthene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Benzo[g,h,i]perylene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Benzo[k]fluoranthene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Chrysene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Dibenzo[a,h]anthracene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Fluoranthene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Fluorene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Indeno[1,2,3-c,d] pyrene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Naphthalene	0.0115 U	0.0230	0.00575	mg/kg	1		07/14/21 21:22
Phenanthrene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
Pyrene	0.0144 U	0.0287	0.00719	mg/kg	1		07/14/21 21:22
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	74.5	58-103		%	1		07/14/21 21:22
Fluoranthene-d10 (surr)	76.6	54-113		%	1		07/14/21 21:22

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 21:22  
Container ID: 1213523007-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.941 g  
Prep Extract Vol: 5 mL



Results of **HOM6-SUB2**

Client Sample ID: **HOM6-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523007  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:10  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.3  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	18.9 J	23.4	7.24	mg/kg	1		06/24/21 21:14
<b>Surrogates</b>							
5a Androstane (surr)	92.9	50-150		%	1		06/24/21 21:14

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:14  
Container ID: 1213523007-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.097 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	81.3 J	117	50.2	mg/kg	1		06/24/21 21:14
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	96.3	50-150		%	1		06/24/21 21:14

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:14  
Container ID: 1213523007-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.097 g  
Prep Extract Vol: 5 mL

## Results of HOM6-SUB2

Client Sample ID: **HOM6-SUB2**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523007  
 Lab Project ID: 1213523

Collection Date: 06/15/21 15:10  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):85.3  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.94 U	5.88	1.76	mg/kg	1		06/29/21 03:41
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	104	50-150		%	1		06/29/21 03:41

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 03:41  
 Container ID: 1213523007-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/15/21 15:10  
 Prep Initial Wt./Vol.: 29.181 g  
 Prep Extract Vol: 29.2867 mL





**Results of HOM6-SUB2**

Client Sample ID: **HOM6-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523007  
Lab Project ID: 1213523

Collection Date: 06/15/21 15:10  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):85.3  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0147 U	0.0294	0.00918	mg/kg	1		06/24/21 19:21
Ethylbenzene	0.0294 U	0.0588	0.0184	mg/kg	1		06/24/21 19:21
o-Xylene	0.0294 U	0.0588	0.0184	mg/kg	1		06/24/21 19:21
P & M -Xylene	0.0590 U	0.118	0.0353	mg/kg	1		06/24/21 19:21
Toluene	0.0294 U	0.0588	0.0184	mg/kg	1		06/24/21 19:21
Xylenes (total)	0.0880 U	0.176	0.0536	mg/kg	1		06/24/21 19:21
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	99.5	71-136		%	1		06/24/21 19:21
4-Bromofluorobenzene (surr)	90	55-151		%	1		06/24/21 19:21
Toluene-d8 (surr)	100	85-116		%	1		06/24/21 19:21

**Batch Information**

Analytical Batch: VMS20848  
Analytical Method: SW8260D  
Analyst: MDT  
Analytical Date/Time: 06/24/21 19:21  
Container ID: 1213523007-B

Prep Batch: VXX37294  
Prep Method: SW5035A  
Prep Date/Time: 06/15/21 15:10  
Prep Initial Wt./Vol.: 29.181 g  
Prep Extract Vol: 29.2867 mL



Results of **HOM11-SUB1**

Client Sample ID: **HOM11-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523008  
Lab Project ID: 1213523

Collection Date: 06/14/21 12:43  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):84.3  
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
2-Methylnaphthalene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Acenaphthene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Acenaphthylene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Anthracene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Benzo(a)Anthracene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Benzo[a]pyrene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Benzo[b]Fluoranthene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Benzo[g,h,i]perylene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Benzo[k]fluoranthene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Chrysene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Dibenzo[a,h]anthracene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Fluoranthene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Fluorene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Indeno[1,2,3-c,d] pyrene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Naphthalene	0.0118 U	0.0235	0.00586	mg/kg	1		07/14/21 21:42
Phenanthrene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
Pyrene	0.0147 U	0.0293	0.00733	mg/kg	1		07/14/21 21:42
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	69.5	58-103		%	1		07/14/21 21:42
Fluoranthene-d10 (surr)	73.4	54-113		%	1		07/14/21 21:42

**Batch Information**

Analytical Batch: XMS12742  
Analytical Method: 8270D SIM (PAH)  
Analyst: LAW  
Analytical Date/Time: 07/14/21 21:42  
Container ID: 1213523008-A

Prep Batch: XXX45037  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 12:29  
Prep Initial Wt./Vol.: 22.744 g  
Prep Extract Vol: 5 mL



Results of **HOM11-SUB1**

Client Sample ID: **HOM11-SUB1**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523008  
Lab Project ID: 1213523

Collection Date: 06/14/21 12:43  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):84.3  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	13.4 J	23.5	7.30	mg/kg	1		06/24/21 21:24
<b>Surrogates</b>							
5a Androstane (surr)	81.8	50-150		%	1		06/24/21 21:24

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:24  
Container ID: 1213523008-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.218 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	59.0 U	118	50.6	mg/kg	1		06/24/21 21:24
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	83.2	50-150		%	1		06/24/21 21:24

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:24  
Container ID: 1213523008-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.218 g  
Prep Extract Vol: 5 mL

## Results of HOM11-SUB1

Client Sample ID: **HOM11-SUB1**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523008  
 Lab Project ID: 1213523

Collection Date: 06/14/21 12:43  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):84.3  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.26 J	6.46	1.94	mg/kg	1		06/29/21 03:58
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	111	50-150		%	1		06/29/21 03:58

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 03:58  
 Container ID: 1213523008-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/14/21 12:43  
 Prep Initial Wt./Vol.: 26.792 g  
 Prep Extract Vol: 29.1959 mL

## Results of HOM11-SUB1

Client Sample ID: **HOM11-SUB1**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523008  
 Lab Project ID: 1213523

Collection Date: 06/14/21 12:43  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):84.3  
 Location:

## Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0161 U	0.0323	0.0101	mg/kg	1		06/24/21 16:38
Ethylbenzene	0.0323 U	0.0646	0.0202	mg/kg	1		06/24/21 16:38
o-Xylene	0.0323 U	0.0646	0.0202	mg/kg	1		06/24/21 16:38
P & M -Xylene	0.0645 U	0.129	0.0388	mg/kg	1		06/24/21 16:38
Toluene	0.0323 U	0.0646	0.0202	mg/kg	1		06/24/21 16:38
Xylenes (total)	0.0970 U	0.194	0.0589	mg/kg	1		06/24/21 16:38
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		06/24/21 16:38
4-Bromofluorobenzene (surr)	88.9	55-151		%	1		06/24/21 16:38
Toluene-d8 (surr)	100	85-116		%	1		06/24/21 16:38

## Batch Information

Analytical Batch: VMS20847  
 Analytical Method: SW8260D  
 Analyst: S.S  
 Analytical Date/Time: 06/24/21 16:38  
 Container ID: 1213523008-B

Prep Batch: VXX37293  
 Prep Method: SW5035A  
 Prep Date/Time: 06/14/21 12:43  
 Prep Initial Wt./Vol.: 26.792 g  
 Prep Extract Vol: 29.1959 mL



**Results of HOM11-SUB2**

Client Sample ID: **HOM11-SUB2**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523009  
 Lab Project ID: 1213523

Collection Date: 06/14/21 16:04  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.0  
 Location:

**Results by Polynuclear Aromatics GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
2-Methylnaphthalene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Acenaphthene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Acenaphthylene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Anthracene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Benzo(a)Anthracene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Benzo[a]pyrene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Benzo[b]Fluoranthene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Benzo[g,h,i]perylene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Benzo[k]fluoranthene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Chrysene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Dibenzo[a,h]anthracene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Fluoranthene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Fluorene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Indeno[1,2,3-c,d] pyrene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Naphthalene	0.0109 U	0.0218	0.00546	mg/kg	1		07/14/21 22:03
Phenanthrene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
Pyrene	0.0137 U	0.0273	0.00682	mg/kg	1		07/14/21 22:03
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	75.3	58-103		%	1		07/14/21 22:03
Fluoranthene-d10 (surr)	78.3	54-113		%	1		07/14/21 22:03

**Batch Information**

Analytical Batch: XMS12742  
 Analytical Method: 8270D SIM (PAH)  
 Analyst: LAW  
 Analytical Date/Time: 07/14/21 22:03  
 Container ID: 1213523009-A

Prep Batch: XXX45037  
 Prep Method: SW3550C  
 Prep Date/Time: 06/24/21 12:29  
 Prep Initial Wt./Vol.: 22.644 g  
 Prep Extract Vol: 5 mL



Results of **HOM11-SUB2**

Client Sample ID: **HOM11-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523009  
Lab Project ID: 1213523

Collection Date: 06/14/21 16:04  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.0  
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	18.7 J	21.7	6.73	mg/kg	1		06/24/21 21:35
<b>Surrogates</b>							
5a Androstane (surr)	86.5	50-150		%	1		06/24/21 21:35

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:35  
Container ID: 1213523009-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.373 g  
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	81.3 J	109	46.7	mg/kg	1		06/24/21 21:35
<b>Surrogates</b>							
n-Triacontane-d62 (surr)	88.5	50-150		%	1		06/24/21 21:35

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK103  
Analyst: IVM  
Analytical Date/Time: 06/24/21 21:35  
Container ID: 1213523009-A

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 06/24/21 09:12  
Prep Initial Wt./Vol.: 30.373 g  
Prep Extract Vol: 5 mL

## Results of HOM11-SUB2

Client Sample ID: **HOM11-SUB2**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523009  
 Lab Project ID: 1213523

Collection Date: 06/14/21 16:04  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):91.0  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.11 U	4.22	1.27	mg/kg	1		06/29/21 04:16
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	111	50-150		%	1		06/29/21 04:16

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/29/21 04:16  
 Container ID: 1213523009-B

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/14/21 16:04  
 Prep Initial Wt./Vol.: 36.881 g  
 Prep Extract Vol: 28.3202 mL





**Results of HOM11-SUB2**

Client Sample ID: **HOM11-SUB2**  
Client Project ID: **106031 Homer Airport PFAS**  
Lab Sample ID: 1213523009  
Lab Project ID: 1213523

Collection Date: 06/14/21 16:04  
Received Date: 06/22/21 10:16  
Matrix: Soil/Solid (dry weight)  
Solids (%):91.0  
Location:

**Results by Volatile GC/MS**

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0106 U	0.0211	0.00658	mg/kg	1		06/24/21 16:55
Ethylbenzene	0.0211 U	0.0422	0.0132	mg/kg	1		06/24/21 16:55
o-Xylene	0.0211 U	0.0422	0.0132	mg/kg	1		06/24/21 16:55
P & M -Xylene	0.0422 U	0.0844	0.0253	mg/kg	1		06/24/21 16:55
Toluene	0.0211 U	0.0422	0.0132	mg/kg	1		06/24/21 16:55
Xylenes (total)	0.0635 U	0.127	0.0385	mg/kg	1		06/24/21 16:55
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		06/24/21 16:55
4-Bromofluorobenzene (surr)	86.1	55-151		%	1		06/24/21 16:55
Toluene-d8 (surr)	101	85-116		%	1		06/24/21 16:55

**Batch Information**

Analytical Batch: VMS20847  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/24/21 16:55  
Container ID: 1213523009-B

Prep Batch: VXX37293  
Prep Method: SW5035A  
Prep Date/Time: 06/14/21 16:04  
Prep Initial Wt./Vol.: 36.881 g  
Prep Extract Vol: 28.3202 mL

## Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523010  
 Lab Project ID: 1213523

Collection Date: 06/14/21 08:00  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.918 J	2.52	0.756	mg/kg	1		06/28/21 23:49
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	116	50-150		%	1		06/28/21 23:49

## Batch Information

Analytical Batch: VFC15679  
 Analytical Method: AK101  
 Analyst: MDT  
 Analytical Date/Time: 06/28/21 23:49  
 Container ID: 1213523010-A

Prep Batch: VXX37321  
 Prep Method: SW5035A  
 Prep Date/Time: 06/14/21 08:00  
 Prep Initial Wt./Vol.: 49.603 g  
 Prep Extract Vol: 25 mL

## Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **106031 Homer Airport PFAS**  
 Lab Sample ID: 1213523010  
 Lab Project ID: 1213523

Collection Date: 06/14/21 08:00  
 Received Date: 06/22/21 10:16  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

## Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00630 U	0.0126	0.00393	mg/kg	1		06/24/21 13:41
Ethylbenzene	0.0126 U	0.0252	0.00786	mg/kg	1		06/24/21 13:41
o-Xylene	0.0126 U	0.0252	0.00786	mg/kg	1		06/24/21 13:41
P & M -Xylene	0.0252 U	0.0504	0.0151	mg/kg	1		06/24/21 13:41
Toluene	0.0126 U	0.0252	0.00786	mg/kg	1		06/24/21 13:41
Xylenes (total)	0.0378 U	0.0756	0.0230	mg/kg	1		06/24/21 13:41
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		06/24/21 13:41
4-Bromofluorobenzene (surr)	93.4	55-151		%	1		06/24/21 13:41
Toluene-d8 (surr)	99.7	85-116		%	1		06/24/21 13:41

## Batch Information

Analytical Batch: VMS20848  
 Analytical Method: SW8260D  
 Analyst: MDT  
 Analytical Date/Time: 06/24/21 13:41  
 Container ID: 1213523010-A

Prep Batch: VXX37294  
 Prep Method: SW5035A  
 Prep Date/Time: 06/14/21 08:00  
 Prep Initial Wt./Vol.: 49.603 g  
 Prep Extract Vol: 25 mL



**Method Blank**

Blank ID: MB for HBN 1821254 [SPT/11305]  
Blank Lab ID: 1618226

Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

**Results by SM21 2540G**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

**Batch Information**

Analytical Batch: SPT11305  
Analytical Method: SM21 2540G  
Instrument:  
Analyst: TMM  
Analytical Date/Time: 6/23/2021 6:15:00PM

Print Date: 07/22/2021 1:33:58PM

## Duplicate Sample Summary

Original Sample ID: 1213483020

Duplicate Sample ID: 1618227

QC for Samples:

1213523001, 1213523002, 1213523003

Analysis Date: 06/23/2021 18:15

Matrix: Soil/Solid (dry weight)

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	92.0	92.9	%	0.93	(< 15 )

## Batch Information

Analytical Batch: SPT11305

Analytical Method: SM21 2540G

Instrument:

Analyst: TMM

Print Date: 07/22/2021 1:33:59PM

## Duplicate Sample Summary

Original Sample ID: 1213523003  
 Duplicate Sample ID: 1618228

Analysis Date: 06/23/2021 18:15  
 Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	91.5	89.8	%	1.80	(< 15 )

## Batch Information

Analytical Batch: SPT11305  
 Analytical Method: SM21 2540G  
 Instrument:  
 Analyst: TMM

## Duplicate Sample Summary

Original Sample ID: 1213544005

Analysis Date: 06/23/2021 18:15

Duplicate Sample ID: 1618229

Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	86.4	87.5	%	1.30	(< 15 )

## Batch Information

Analytical Batch: SPT11305

Analytical Method: SM21 2540G

Instrument:

Analyst: TMM

Print Date: 07/22/2021 1:33:59PM

## Method Blank

Blank ID: MB for HBN 1821324 [VXX/37293]  
 Blank Lab ID: 1618598

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1213523001, 1213523002, 1213523003, 1213523008, 1213523009

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00390	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	110	71-136		%
4-Bromofluorobenzene (surr)	94.5	55-151		%
Toluene-d8 (surr)	101	85-116		%

## Batch Information

Analytical Batch: VMS20847  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/24/2021 10:24:00AM

Prep Batch: VXX37293  
 Prep Method: SW5035A  
 Prep Date/Time: 6/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 50 g  
 Prep Extract Vol: 25 mL



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [VXX37293]

Blank Spike Lab ID: 1618599

Date Analyzed: 06/24/2021 10:40

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523008, 1213523009

## Results by SW8260D

### Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	0.750	0.764	102	( 77-121 )
Ethylbenzene	0.750	0.748	100	( 76-122 )
o-Xylene	0.750	0.774	103	( 77-123 )
P & M -Xylene	1.50	1.52	101	( 77-124 )
Toluene	0.750	0.739	99	( 77-121 )
Xylenes (total)	2.25	2.29	102	( 78-124 )

### Surrogates

1,2-Dichloroethane-D4 (surr)	0.750		96	( 71-136 )
4-Bromofluorobenzene (surr)	0.750		91	( 55-151 )
Toluene-d8 (surr)	0.750		102	( 85-116 )

## Batch Information

Analytical Batch: VMS20847

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: S.S

Prep Batch: VXX37293

Prep Method: SW5035A

Prep Date/Time: 06/24/2021 06:00

Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

## Matrix Spike Summary

Original Sample ID: 1618600  
 MS Sample ID: 1618601 MS  
 MSD Sample ID: 1618602 MSD

Analysis Date: 06/24/2021 13:53  
 Analysis Date: 06/24/2021 12:30  
 Analysis Date: 06/24/2021 12:47  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523008, 1213523009

## Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.0142U	1.70	1.78	104	1.70	1.70	100	77-121	4.40	(< 20 )
Ethylbenzene	0.0284U	1.70	1.69	99	1.70	1.63	96	76-122	3.60	(< 20 )
o-Xylene	0.0284U	1.70	1.73	102	1.70	1.67	98	77-123	3.70	(< 20 )
P & M -Xylene	0.0565U	3.40	3.40	100	3.40	3.26	96	77-124	4.30	(< 20 )
Toluene	0.0284U	1.70	1.67	98	1.70	1.62	95	77-121	3.20	(< 20 )
Xylenes (total)	0.0850U	5.10	5.14	101	5.10	4.93	97	78-124	4.10	(< 20 )
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		1.70	1.65	97	1.70	1.65	97	71-136	0.21	
4-Bromofluorobenzene (surr)		2.84	2.24	79	2.84	2.16	76	55-151	3.50	
Toluene-d8 (surr)		1.70	1.73	102	1.70	1.73	102	85-116	0.36	

## Batch Information

Analytical Batch: VMS20847  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/24/2021 12:30:00PM

Prep Batch: VXX37293  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 6/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 22.04g  
 Prep Extract Vol: 25.00mL

## Method Blank

Blank ID: MB for HBN 1821332 [VXX/37294]  
 Blank Lab ID: 1618646

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1213523004, 1213523005, 1213523006, 1213523007, 1213523010

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00390	mg/kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/kg
o-Xylene	0.0125U	0.0250	0.00780	mg/kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/kg
Toluene	0.0125U	0.0250	0.00780	mg/kg
Xylenes (total)	0.0375U	0.0750	0.0228	mg/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	102	71-136		%
4-Bromofluorobenzene (surr)	93.2	55-151		%
Toluene-d8 (surr)	101	85-116		%

## Batch Information

Analytical Batch: VMS20848  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: MDT  
 Analytical Date/Time: 6/24/2021 10:21:00AM

Prep Batch: VXX37294  
 Prep Method: SW5035A  
 Prep Date/Time: 6/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 50 g  
 Prep Extract Vol: 25 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [VXX37294]  
 Blank Spike Lab ID: 1618647  
 Date Analyzed: 06/24/2021 10:36

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523004, 1213523005, 1213523006, 1213523007, 1213523010

## Results by SW8260D

Parameter	Blank Spike (mg/kg)			CL
	Spike	Result	Rec (%)	
Benzene	0.750	0.770	103	( 77-121 )
Ethylbenzene	0.750	0.748	100	( 76-122 )
o-Xylene	0.750	0.765	102	( 77-123 )
P & M -Xylene	1.50	1.47	98	( 77-124 )
Toluene	0.750	0.758	101	( 77-121 )
Xylenes (total)	2.25	2.24	99	( 78-124 )
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	0.750		100	( 71-136 )
4-Bromofluorobenzene (surr)	0.750		90	( 55-151 )
Toluene-d8 (surr)	0.750		101	( 85-116 )

## Batch Information

Analytical Batch: VMS20848  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: MDT

Prep Batch: VXX37294  
 Prep Method: SW5035A  
 Prep Date/Time: 06/24/2021 06:00  
 Spike Init Wt./Vol.: 0.750 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:



### Matrix Spike Summary

Original Sample ID: 1618648  
 MS Sample ID: 1618649 MS  
 MSD Sample ID: 1618650 MSD

Analysis Date: 06/24/2021 14:12  
 Analysis Date: 06/24/2021 12:24  
 Analysis Date: 06/24/2021 12:39  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1213523004, 1213523005, 1213523006, 1213523007, 1213523010

### Results by SW8260D

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.00530U	0.639	0.650	102	0.639	0.640	100	77-121	1.50	(< 20 )
Ethylbenzene	0.0107U	0.639	0.635	99	0.639	0.631	99	76-122	0.57	(< 20 )
o-Xylene	0.0107U	0.639	0.652	102	0.639	0.648	101	77-123	0.52	(< 20 )
P & M -Xylene	0.0213U	1.28	1.25	98	1.28	1.25	98	77-124	0.61	(< 20 )
Toluene	0.0107U	0.639	0.644	101	0.639	0.643	101	77-121	0.13	(< 20 )
Xylenes (total)	0.0319U	1.92	1.91	99	1.92	1.89	99	78-124	0.58	(< 20 )
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		0.639	0.653	102	0.639	0.645	101	71-136	1.20	
4-Bromofluorobenzene (surr)		1.06	0.673	63	1.06	0.667	63	55-151	0.99	
Toluene-d8 (surr)		0.639	0.644	101	0.639	0.643	101	85-116	0.17	

### Batch Information

Analytical Batch: VMS20848  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: MDT  
 Analytical Date/Time: 6/24/2021 12:24:00PM

Prep Batch: VXX37294  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 6/24/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 58.70g  
 Prep Extract Vol: 25.00mL

Print Date: 07/22/2021 1:34:12PM

## Method Blank

Blank ID: MB for HBN 1821483 [VXX/37321]  
Blank Lab ID: 1619394

Matrix: Soil/Solid (dry weight)

### QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009, 1213523010

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.948J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	91.4	50-150		%

## Batch Information

Analytical Batch: VFC15679  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: MDT  
Analytical Date/Time: 6/28/2021 11:31:00PM

Prep Batch: VXX37321  
Prep Method: SW5035A  
Prep Date/Time: 6/28/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [VXX37321]  
 Blank Spike Lab ID: 1619395  
 Date Analyzed: 06/28/2021 22:55

Spike Duplicate ID: LCSD for HBN 1213523 [VXX37321]  
 Spike Duplicate Lab ID: 1619396  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009, 1213523010

## Results by AK101

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	15.1	121	* 12.5	14.7	118	( 60-120 )	2.60	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		101	1.25		155	* ( 50-150 )	42.00	
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## Batch Information

Analytical Batch: **VFC15679**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **MDT**

Prep Batch: **VXX37321**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **06/28/2021 06:00**  
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 07/22/2021 1:34:15PM



**Method Blank**

Blank ID: MB for HBN 1821258 [XXX/45032]  
Blank Lab ID: 1618250

Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

**Results by AK102**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/kg
<b>Surrogates</b>				
5a Androstane (surr)	92.7	60-120		%

**Batch Information**

Analytical Batch: XFC15971  
Analytical Method: AK102  
Instrument: Agilent 7890B F  
Analyst: IVM  
Analytical Date/Time: 6/24/2021 6:32:00PM

Prep Batch: XXX45032  
Prep Method: SW3550C  
Prep Date/Time: 6/24/2021 9:12:50AM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 07/22/2021 1:34:17PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [XXX45032]  
 Blank Spike Lab ID: 1618251  
 Date Analyzed: 06/24/2021 18:41

Spike Duplicate ID: LCSD for HBN 1213523  
 [XXX45032]  
 Spike Duplicate Lab ID: 1618252  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007,  
 1213523008, 1213523009

## Results by AK102

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	667	685	103	667	701	105	( 75-125 )	2.40	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	16.7		101	16.7		103	( 60-120 )	2.20	

## Batch Information

Analytical Batch: **XFC15971**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B F**  
 Analyst: **IVM**

Prep Batch: **XXX45032**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **06/24/2021 09:12**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 07/22/2021 1:34:19PM

## Method Blank

Blank ID: MB for HBN 1821258 [XXX/45032]  
 Blank Lab ID: 1618250

Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	50.0U	100	43.0	mg/kg
<b>Surrogates</b>				
n-Triacontane-d62 (surr)	104	60-120		%

## Batch Information

Analytical Batch: XFC15971  
 Analytical Method: AK103  
 Instrument: Agilent 7890B F  
 Analyst: IVM  
 Analytical Date/Time: 6/24/2021 6:32:00PM

Prep Batch: XXX45032  
 Prep Method: SW3550C  
 Prep Date/Time: 6/24/2021 9:12:50AM  
 Prep Initial Wt./Vol.: 30 g  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [XXX45032]  
 Blank Spike Lab ID: 1618251  
 Date Analyzed: 06/24/2021 18:41

Spike Duplicate ID: LCSD for HBN 1213523  
 [XXX45032]  
 Spike Duplicate Lab ID: 1618252  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007,  
 1213523008, 1213523009

## Results by AK103

Parameter	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	667	650	98	667	657	99	( 60-120 )	1.10	(< 20 )
<b>Surrogates</b>									
n-Triacontane-d62 (surr)	16.7		104	16.7		106	( 60-120 )	1.30	

## Batch Information

Analytical Batch: **XFC15971**  
 Analytical Method: **AK103**  
 Instrument: **Agilent 7890B F**  
 Analyst: **IVM**

Prep Batch: **XXX45032**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **06/24/2021 09:12**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 07/22/2021 1:34:24PM

## Method Blank

Blank ID: MB for HBN 1821276 [XXX/45037]  
 Blank Lab ID: 1618347

Matrix: Soil/Solid (dry weight)

QC for Samples:

1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
2-Methylnaphthalene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthene	0.0125U	0.0250	0.00625	mg/kg
Acenaphthylene	0.0125U	0.0250	0.00625	mg/kg
Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00625	mg/kg
Benzo[a]pyrene	0.0125U	0.0250	0.00625	mg/kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00625	mg/kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Chrysene	0.0125U	0.0250	0.00625	mg/kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00625	mg/kg
Fluoranthene	0.0125U	0.0250	0.00625	mg/kg
Fluorene	0.0125U	0.0250	0.00625	mg/kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00625	mg/kg
Naphthalene	0.0100U	0.0200	0.00500	mg/kg
Phenanthrene	0.0125U	0.0250	0.00625	mg/kg
Pyrene	0.0125U	0.0250	0.00625	mg/kg
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	80.4	58-103		%
Fluoranthene-d10 (surr)	79.5	54-113		%

## Batch Information

Analytical Batch: XMS12691  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: LAW  
 Analytical Date/Time: 6/24/2021 6:43:00PM

Prep Batch: XXX45037  
 Prep Method: SW3550C  
 Prep Date/Time: 6/24/2021 12:29:07PM  
 Prep Initial Wt./Vol.: 22.5 g  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213523 [XXX45037]

Blank Spike Lab ID: 1618348

Date Analyzed: 06/24/2021 19:03

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by 8270D SIM (PAH)

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0894	80	(43-111)
2-Methylnaphthalene	0.111	0.0894	80	(39-114)
Acenaphthene	0.111	0.0970	87	(44-111)
Acenaphthylene	0.111	0.0959	86	(39-116)
Anthracene	0.111	0.102	92	(50-114)
Benzo(a)Anthracene	0.111	0.0917	83	(54-122)
Benzo[a]pyrene	0.111	0.0952	86	(50-125)
Benzo[b]Fluoranthene	0.111	0.101	91	(53-128)
Benzo[g,h,i]perylene	0.111	0.0972	88	(49-127)
Benzo[k]fluoranthene	0.111	0.101	91	(56-123)
Chrysene	0.111	0.0969	87	(57-118)
Dibenzo[a,h]anthracene	0.111	0.0990	89	(50-129)
Fluoranthene	0.111	0.0917	83	(55-119)
Fluorene	0.111	0.0994	90	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.0982	88	(49-130)
Naphthalene	0.111	0.0812	73	(38-111)
Phenanthrene	0.111	0.103	92	(49-113)
Pyrene	0.111	0.0919	83	(55-117)
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	0.111		80	(58-103)
Fluoranthene-d10 (surr)	0.111		79	(54-113)

## Batch Information

Analytical Batch: XMS12691

Analytical Method: 8270D SIM (PAH)

Instrument: Agilent GC 7890B/5977A SWA

Analyst: LAW

Prep Batch: XXX45037

Prep Method: SW3550C

Prep Date/Time: 06/24/2021 12:29

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

## Matrix Spike Summary

Original Sample ID: 1213483021  
 MS Sample ID: 1618349 MS  
 MSD Sample ID: 1618350 MSD

Analysis Date: 06/24/2021 19:24  
 Analysis Date: 06/24/2021 19:44  
 Analysis Date: 06/24/2021 20:05  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213523001, 1213523002, 1213523003, 1213523004, 1213523005, 1213523006, 1213523007, 1213523008, 1213523009

## Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0141U	0.126	0.102	81	0.126	0.108	85	43-111	5.50	(< 20)
2-Methylnaphthalene	0.0141U	0.126	0.104	82	0.126	0.110	87	39-114	5.60	(< 20)
Acenaphthene	0.0141U	0.126	0.111	88	0.126	0.113	90	44-111	2.40	(< 20)
Acenaphthylene	0.0141U	0.126	0.112	89	0.126	0.116	92	39-116	4.10	(< 20)
Anthracene	0.0141U	0.126	0.115	91	0.126	0.118	93	50-114	2.50	(< 20)
Benzo(a)Anthracene	0.0141U	0.126	0.106	84	0.126	0.107	85	54-122	1.10	(< 20)
Benzo(a)pyrene	0.0141U	0.126	0.109	87	0.126	0.111	88	50-125	1.70	(< 20)
Benzo(b)Fluoranthene	0.0141U	0.126	0.109	86	0.126	0.111	88	53-128	2.10	(< 20)
Benzo(g,h,i)perylene	0.0141U	0.126	0.107	85	0.126	0.111	87	49-127	2.90	(< 20)
Benzo(k)fluoranthene	0.0141U	0.126	0.110	87	0.126	0.111	88	56-123	1.50	(< 20)
Chrysene	0.0141U	0.126	0.108	86	0.126	0.113	90	57-118	4.40	(< 20)
Dibenzo(a,h)anthracene	0.0141U	0.126	0.106	84	0.126	0.110	87	50-129	3.60	(< 20)
Fluoranthene	0.0141U	0.126	0.110	87	0.126	0.111	88	55-119	1.00	(< 20)
Fluorene	0.0141U	0.126	0.113	90	0.126	0.119	94	47-114	4.80	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0141U	0.126	0.106	85	0.126	0.111	87	49-130	3.80	(< 20)
Naphthalene	0.0113U	0.126	0.0967	77	0.126	0.102	81	38-111	5.70	(< 20)
Phenanthrene	0.0141U	0.126	0.118	94	0.126	0.121	95	49-113	1.80	(< 20)
Pyrene	0.0141U	0.126	0.109	87	0.126	0.110	87	55-117	1.30	(< 20)
<b>Surrogates</b>										
2-Methylnaphthalene-d10 (surr)		0.126	0.100	80	0.126	0.104	82	58-103	3.60	
Fluoranthene-d10 (surr)		0.126	0.0945	75	0.126	0.100	79	54-113	6.20	

## Batch Information

Analytical Batch: XMS12691  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: LAW  
 Analytical Date/Time: 6/24/2021 7:44:00PM

Prep Batch: XXX45037  
 Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml  
 Prep Date/Time: 6/24/2021 12:29:07PM  
 Prep Initial Wt./Vol.: 22.80g  
 Prep Extract Vol: 5.00mL

2355 Hill Road  
 Fairbanks, AK 99709  
 (907) 479-0600  
 www.shannonwilson.com

# CHAIN-OF-CUSTODY RECORD

Laboratory Page 1 of 1  
SGS North America  
 Attn: Jan Dawkins

Analytical Methods (include preservative if used)

Quote No: **1213523**

MSA Number: **MSA-565-206**

J-Flags:  Yes  No

Turn Around Time:  Normal  Rush

Please Specify

Lab No: **AK101** **AK102** **AK103** **AK104** **AK105** **AK106** **AK107** **AK108** **AK109** **AK110** **AK111** **AK112** **AK113** **AK114** **AK115** **AK116** **AK117** **AK118** **AK119** **AK120**

PAH **56260 D** **56270 D - 5 M**

BTEX **56260 D** **56270 D - 5 M**

RRO **56260 D** **56270 D - 5 M**

DRO **56260 D** **56270 D - 5 M**

GRO **56260 D** **56270 D - 5 M**



Composition/Grab?    
 Sample Containers

Sample Identity	Lab No.	Date Sampled	Time	GR0	DR0	AK101	AK102	AK103	BTEX	PAH	56260 D	56270 D - 5 M	Soil Grab Sample
HOM 5 - SS	1AB	6/15/21	13:25	X	X	X	X	X	X	X	X	X	2
HOM 5 - SUB 1	2AB	6/15/21	13:45	X	X	X	X	X	X	X	X	X	2
HOM 5 - SUB 2	3AB	6/15/21	13:50	X	X	X	X	X	X	X	X	X	2
HOM 6 - SS	4AB	6/15/21	14:38	X	X	X	X	X	X	X	X	X	2
HOM 6 - SUB 1	5AB	6/15/21	15:00	X	X	X	X	X	X	X	X	X	2
HOM 6 D - SUB 1	6AB	6/15/21	15:00	X	X	X	X	X	X	X	X	X	2
HOM 6 - SUB 2	7AB	6/15/21	15:10	X	X	X	X	X	X	X	X	X	2
HOM 11 - SUB 1	8AB	6/14/21	12:43	X	X	X	X	X	X	X	X	X	2
HOM 11 - SUB 2	9AB	6/14/21	16:04	X	X	X	X	X	X	X	X	X	2
Trip Blank	10A	6/14/21	08:00	X									1

Project Information	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Number: <b>106031</b>	Signature: <i>Adam Wyborny</i>	Signature: <i>William Hunt</i>	Signature: _____
Name: <b>Homer Airport PFAS</b>	Printed Name: <b>Adam Wyborny</b>	Printed Name: <b>William Hunt</b>	Printed Name: _____
Contact: <b>Ashley Jaramillo</b>	Date: <b>6/21/21</b>	Date: <b>6-21-21</b>	Date: _____
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Company: <b>Shannon &amp; Wilson, Inc.</b>	Company: _____	Company: _____
Sampler: <b>APW, MED</b>	Received By: <b>1.</b>	Received By: <b>2.</b>	Received By: <b>3.</b>
	Signature: <i>William Hunt</i>	Signature: _____	Signature: <i>John Calu</i>
	Printed Name: <b>William Hunt</b>	Printed Name: _____	Printed Name: <b>Ryan Conlan</b>
	Date: <b>6/21/21</b>	Date: <b>6/21/21</b>	Date: <b>6/22/21</b>
	Company: _____	Company: _____	Company: <b>SGS</b>

**Sample Receipt**

Total No. of Containers: **1**

COC Seals/Intact? **Y/N/A**

Received Good Cond./Cold **Good**

Temp: **1.7 C**

Delivery Method: **Hand**

**Notes:**

Trip Blank accompanied samples at all times.

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - job file



e-Sample Receipt Form FBK

SGS Workorder #:

S&W S

S&W S

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below			
<b>Chain of Custody / Temperature Requirements</b>		Yes	Exemption permitted if sampler hand carries/delivers.		
Were Custody Seals intact? Note # & location	N/A				
COC accompanied samples?	Yes				
DOD: Were samples received in COC corresponding coolers?	N/A				
<input type="checkbox"/> **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	@	1.7 °C Therm. ID: D50
		Cooler ID:		@	°C Therm. ID:
		Cooler ID:		@	°C Therm. ID:
		Cooler ID:		@	°C Therm. ID:
<p>If samples received without a temperature blank, the "cooler temperature" will be documented instead &amp; "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.</p> <p><i>*If &gt;6°C, were samples collected &lt;8 hours ago?</i></p> <p><i>If &lt;0°C, were sample containers ice free?</i></p> <p>Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.</p>					
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	NC				
**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 samples in good condition (no leaks/cracks/breakage)?	Yes				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))	Yes				
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?	NC				
For Rush/Short Hold Time, was RUSH/Short HT email sent?	N/A				
<b>Note to Client:</b> Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.					
Additional notes (if applicable):					
<b>SGS Profile #</b>	<b>364503</b>	364503			





e-Sample Receipt Form

SGS Workorder #:

1213523

1213523

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		N/A Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F,1B
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
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 @ 3.6 °C Therm. ID: D55
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.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		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	N/A ***Exemption permitted for metals (e.g.200.8/6020B).
<b>Volatile / LL-Hg Requirements</b>		
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	
<b>Note to Client:</b> 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>
1213523001-A	No Preservative Required	OK			
1213523001-B	Methanol field pres. 4 C	OK			
1213523002-A	No Preservative Required	OK			
1213523002-B	Methanol field pres. 4 C	OK			
1213523003-A	No Preservative Required	OK			
1213523003-B	Methanol field pres. 4 C	OK			
1213523004-A	No Preservative Required	OK			
1213523004-B	Methanol field pres. 4 C	OK			
1213523005-A	No Preservative Required	OK			
1213523005-B	Methanol field pres. 4 C	OK			
1213523006-A	No Preservative Required	OK			
1213523006-B	Methanol field pres. 4 C	OK			
1213523007-A	No Preservative Required	OK			
1213523007-B	Methanol field pres. 4 C	OK			
1213523008-A	No Preservative Required	OK			
1213523008-B	Methanol field pres. 4 C	OK			
1213523009-A	No Preservative Required	OK			
1213523009-B	Methanol field pres. 4 C	OK			
1213523010-A	Methanol field pres. 4 C	OK			

### 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 Data Review Checklist**

Completed By:

Ashley Jaramillo

Title:

Senior Chemist

Date:

July 26, 2021

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc. (SGS)

Laboratory Report Number:

1213523

Laboratory Report Date:

July 22, 2021

CS Site Name:

ADOT&PF Homer Airport Statewide PFAS

ADEC File Number:

2314.38.042

Hazard Identification Number:

27309

1213523

Laboratory Report Date:

July 22, 2021

CS Site Name:

**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:

All analyses were performed by the SGS laboratory in Anchorage, AK. SGS has been approved by the DEC CS program for the requested analyses.

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:

Samples were not transferred to another “network” laboratory or sub-contracted to an alternate laboratory.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

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 coolers arrived at the laboratory containing temperature blanks with readings within the DEC recommended temperature range of 0° to 6°C.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

The laboratory noted that the samples arrived in good condition.

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 sample discrepancies were noted by the laboratory at sample login.

e. Data quality or usability affected?

Comments:

Not applicable, data quality and/or usability not affected, see above.

#### 4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

The PAH LOQs are elevated due to sample dilution for *HOM5-SS*. The sample was diluted due to the dark color of the extract. Data quality and/or usability not affected.

The LCS recovery for GRO was biased high for preparatory batch VXX37321. However, this analyte was not detected above the LOQ in the associated samples. See Section 6.b. for further details regarding this discrepancy.

The GRO surrogate recovery for 4-bromofluorobenzene does not meet QC criteria in the LCSD sample associated with preparatory batch VXX37321. Refer to Section 6.d. for further details regarding this discrepancy.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

Corrective actions not required, see above.

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

Case narrative does not discuss effect on data quality, it only discusses discrepancies and what was done in light of them, as applicable. Any notable data quality issues mentioned in the case narrative are discussed above in 4.b. or elsewhere within this DEC checklist.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

Analytical sensitivity was evaluated to verify that limits of detection (LODs) met the applicable DEC soil cleanup levels for non-detect results, as appropriate. The LODs for naphthalene, analyzed by 8270D SIM, and benzene, analyzed by 8260D, did not meet the applicable soil cleanup level in sample *HOM5-SS*. This sample required dilution which elevated LODs in this sample. These analytes may not be detected, if present, at their respective cleanup level.  
  
All analytes that are non-detect with LODs elevated above cleanup levels are identified in the results tables.

e. Data quality or usability affected?

See above.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

No analytes were detected in method blank samples at concentrations exceeding the LOQ; however, GRO was detected at a concentration below the LOQ for preparatory batch VXX37321. GRO was detected in the following associated samples at concentrations less than five-times that of the method blank: *HOM11-SUB1*, *HOM5-SUB2*, *HOM6-SS*, *HOM6-SUB1*, and the trip blank sample. Therefore, the GRO results in these samples are considered estimates with no direction of bias and have been qualified 'B' due to potential laboratory cross-contamination. Impact to data is minor as GRO was detected in the method blank sample at a concentration three orders of magnitude lower than the DEC soil cleanup level.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

See above.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

v. Data quality or usability affected?

Comments:

Yes; see above.

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:

LCSs were reported for PAH and BTEX analyses. Precision for these parameters is evaluated using the MS/MSD sample results.

LCS/LCSDs were reported for GRO, DRO, and RRO analyses.

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ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/inorganic analyses were not requested as a part of this work order.

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:

The LCS associated with preparatory batch VXX37321 had a high recovery for GRO. GRO was detected in the following associated samples: *HOM11-SUB1*, *HOM5-SUB2*, *HOM6-SS*, *HOM6-SUB1* and the trip blank sample. The GRO results in these sample are considered estimated, biased high. However, these samples were previously qualified due to a method blank detection of GRO. No additional flags are required due to the LCS recovery issue. GRO was not detected in the remaining samples, therefore flagging is not required.

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

See above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

See above.



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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:

MS/MSDs were reported for PAH and BTEX analyses.  
No MS and/or MSDs were reported for GRO, DRO, RRO analyses. Precision for these parameters is evaluated using the LCS/LCSD sample results.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

Metals/inorganic analyses were not requested as a part of this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

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:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Not applicable, %Rs and RPDs were all within laboratory limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

See above.

1213523

Laboratory Report Date:

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CS Site Name:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No, see above.

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:

GRO surrogate (4-bromofluorobenzene) was recovered above laboratory limits in the LCS associated with preparatory batch VXX37321. However, surrogate recoveries for associated project samples were within laboratory acceptance criteria. Sample results are not affected by surrogate recovery failures in QC samples.

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:

See above.

iv. Data quality or usability affected?

Comments:

See above.

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:

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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:

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

No analytes were detected in the trip blank samples at concentrations exceeding the LOQ; however, GRO was detected at a concentration below the LOQ. The GRO detected in the trip blank sample may be due to laboratory cross-contamination as indicated by a similar detection in the associated method blank sample. No additional qualifiers were applied to data due to the detection in the trip blank sample.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No applicable, see above.

v. Data quality or usability affected?

Comments:

See above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

Sample *HOM6D-SUB1* was the field duplicate of *HOM6-SUB1*.

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

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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 R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

Where calculable, analytical results met the comparison criterion (≤ 50% for soil) for the field duplicate pair.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No, see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

Reusable equipment was not used to collect samples, therefore no decontamination blank required.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

See above.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable, see above.

iii. Data quality or usability affected?

Comments:

Not applicable, see above.

1213523

Laboratory Report Date:

July 22, 2021

CS Site Name:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A  Comments:

Field quality control sample results, such as trip blank, are not reported in the results table. Therefore, where applicable, the uncertainty associated with these field quality control samples are only noted in the LDRC.

## Appendix E QA/QC Summary

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## APPENDIX E: QA/QC SUMMARY

CCV	continuing calibration verification
COC	chain-of-custody
°C	degrees Celsius
DOT&PF	Alaska Department of Transportation & Public Facilities
DQO	data quality objectives
DVPP	Data-Validation Program Plan
GWP	General Work Plan
HFPO-DA	hexafluoropropylene oxide dimer
HOM	Homer Airport
IDA	isotope dilution analyte
LCS	laboratory control samples
LCSD	laboratory control sample duplicate
LOD	limit of detection
MS	matrix spike sample
MSD	matrix spike duplicate sample
NEtFOSAA	N-ethylperfluorooctanesulfonamidoacetic acid
NMeFOSAA	N-methylperfluorooctanesulfonamidoacetic acid
PFDA	perfluorodecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFAS	per- and polyfluoroalkyl substances
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFNA	perfluorononanoic acid
PFTeA	perfluorotetradecanoic acid
PFUnA	perfluoroundecanoic acid
PID	photoionization detector
ppm	parts per million
QA/QC	quality assurance/quality control
RL	reporting limit
RRO	residual range organics
RPD	relative percent difference
S&W	Shannon & Wilson, Inc.
SGS	SGS North America
WO	work order

TestAmerica

Eurofins TestAmerica Laboratories, Inc.

APPENDIX E: QA/QC SUMMARY



## E.1 OVERVIEW

This quality assurance (QA)/quality control (QC) summary outlines the technical review of analytical results generated in support of initial site characterization activities at and near the Homer Airport (HOM) in June 2021. Water supply wells, groundwater, soil (subsurface and surface), sediment, and surface water events are summarized below. Analytical results tables are attached to the DOT&PF Statewide PFAS Addendum 004-HOM-01 Summary Report.

Shannon & Wilson reviewed project and QC analytical data to assess whether the data met the designated quality objectives and were acceptable for project use. The project data were reviewed for deviations to the requirements presented in the DOT&PF Statewide PFAS General Work Plan (GWP). The review included evaluation of the following: sample collection and handling, holding times, blanks (to assess contamination), project sample and laboratory quality control sample duplicates (to assess precision), laboratory control samples (LCSs) and sample surrogate recoveries (to assess accuracy), and matrix spike sample (MS) recoveries (to assess matrix effects). Calibration curves and continuing calibration verification (CCV) recoveries were not reviewed unless a QC discrepancy was noted by the laboratory in a case narrative. QC deviations that do not impact data quality (e.g., high LCS recovery associated with non-detect results), are not discussed. More elaborate data quality descriptions are reported in the DEC Laboratory Data Review Checklists (LDRCs), which are included at the end of Appendix D.

Sample results and limits of detection (LODs)/reporting limits (RLs) for non-detect results were compared to the most current cleanup levels presented in Title 18 of the Alaska Administrative Code (AAC) Chapter 75.341 and 75.345, (DEC, 2018) for PFOS and PFOA.

Applicable data quality indicators are discussed for each method under separate subheadings. Data which did not meet acceptance criteria have been described and the associated samples and data quality implications or qualifications are summarized.

### E.1.1 Analytical Methods and Data Quality Objectives

The analytical methods and associated data quality objectives (DQOs) used for this review were established in the GWP and the Data-Validation Program Plan (DVPP). The DQOs represent the minimum acceptable QC limits and goals for analytical measurements and are used as comparison criteria during data quality review to determine both the quality and usability of the analytical data.

The six DQOs used for this review were accuracy, precision, representativeness, comparability, sensitivity, and completeness.

- Accuracy measures the correctness, or the closeness, between the true value and the quantity detected. It is measured by calculating the percent recovery of known concentrations of spiked compounds that were introduced into the appropriate sample matrix. Surrogate, LCS, and MS sample recoveries were used to measure accuracy for this project.
- Precision measures the reproducibility of repetitive measurements. It is measured by calculating the relative percent difference (RPD) between duplicate samples. Laboratory duplicate samples, field duplicate samples, MS and matrix spike duplicate sample (MSD) sample pairs, and LCS and laboratory control sample duplicate (LCSD) pairs were used to measure precision for this project.
- Representativeness describes the degree to which data accurately and precisely represents site characteristics. This is addressed in more detail in the following section(s).
- Comparability describes whether two data sets can be considered equivalent with respect to the project goal. This is addressed in more detail in the following section(s).
- Sensitivity describes the lowest concentration that the analytical method can reliably quantitate and is evaluated by verifying that the detected results and/or LODs/RLs meet the project-specific cleanup levels and/or screening levels.
- Completeness describes the amount of valid data obtained from the sampling event(s). It is calculated as the percentage of valid measurements compared to the total number of measurements. The completeness goal for this project was set at 90 percent.

In addition to these criteria for the six DQOs described above, sample collection and handling procedures and blank samples were reviewed to ensure overall data quality. Sample collection forms were reviewed to verify that representative samples were collected and samples were submitted without headspace (if applicable). Sample handling was reviewed to assess parameters such as chain-of-custody (COC) documentation, the use of appropriate sample containers and preservatives, shipment cooler temperature, and method-specified sample holding times. Each of these parameters contributes to the general representativeness and comparability of the project data. The combination of evaluations of the above-mentioned parameters will lead to a determination of the overall project data completeness.

### E.1.2 Summary of Samples

PFAS project and quality control samples were analyzed by Eurofins TestAmerica Laboratory of West Sacramento, California (TestAmerica). TestAmerica is certified for the

analysis of PFAS on February 11, 2021 by LCMS-MS compliant with QSM Version 5.3 Table B-15. The reported analytes were included in the DEC’s Contaminated Sites Laboratory Approval 17-020. Prior to February 11, 2021, TestAmerica was certified for the analysis of PFOS and PFOA only by Method 537.

Petroleum project and quality control samples were analyzed by SGS of North America (SGS). SGS is validated by the State of Alaska through the Contaminated Sites Program.

The laboratory reports were assigned the following work order (WO) numbers:

**Exhibit E-1: WO Numbers**

Lab	Groundwater	Soil (surface, subsurface, and sediment)	Surface Water	Water Supply Well
SGS (petroleum)	1213521	1213523	--	--
Test America (PFAS)	320-785273-1	320-75270-1	320-785273-1	320-75272-1

PFAS = per- and polyfluoroalkyl substances; WO = work order

The laboratory reports and associated DEC LDRCs are included in Appendix D.

E.1.2.1 Groundwater

- A total of seven groundwater samples were collected from TWP’s or existing MW’s at the HOM (including 1 field duplicates).

E.1.2.2 Soil

- A total of 23 surface soil samples were collected from surface soils (including 2 duplicates).
- A total of two sediment samples were collected from Lampert and Beluga Lakes.
- A total of 18 subsurface samples were collected from borings (including one duplicate).

E.1.2.3 Surface Water

- A total of seven surface water samples were collected from surface water bodies at the HOM.

E.1.2.4 Water Supply Well

- A total of 4 water supply well samples were collected from identified wells in the HOM search area (including one supuplicate).

## E.2 DATA QUALITY REVIEW

This section presents the findings of the data quality review and the resulting data qualifications for project samples. See the associated LDRC in Appendix D for more elaborate data quality descriptions.

### E.2.1 Sample Collection

Sample collection forms were reviewed to ensure, where applicable, parameters met the stabilization guide identified in the GWP and DEC Field Sampling Guidance. All samples met stabilization criteria.

### E.2.2 Sample Handling

The evaluation of proper sample handling procedures includes verification of the following: correct COC documentation, appropriate sample containers and preservatives, cooler temperatures maintained within the DEC-recommended temperature range (0 to 6 degrees Celsius [°C]), and sample analyses performed within method-specified holding times. No sample handling discrepancies were noted upon receipt at the laboratory which resulted in data qualification. See the associated DEC LDRC checklist for a more detailed discussion.

### E.2.3 Method Blanks

Method blanks were utilized to detect potential laboratory cross-contamination of project samples. Samples are considered affected if they are detected within ten times the concentration of the detection in the method blank. Samples were analyzed in every batch, as required. The following analytes were detected which resulted in the qualification of data.

- Groundwater WO 1213521
  - The DRO results of samples *HOM5-GW*, *HOM5D-GW*, *HOM6-GW*, and *FAA-MW-2* are considered not detected and are instead reported at the LOQ. These results are flagged 'UB' to identify the possible laboratory contamination.
- Soil WO 1213523
  - No analytes were detected in method blank samples at concentrations exceeding the LOQ; however, GRO were detected at a concentration below the LOQ for preparatory batch VXX37321. GRO were detected in the following associated samples at concentrations less than five-times that of the method blank: The GRO results of sample *HOM11-SUB1*, *HOM5-SUB2*, *HOM6-SS*, *HOM6-SUB1*, and the trip blank sample are considered not detected and are instead reported at the LOQ. These results are flagged 'UB' to identify the possible laboratory contamination.

#### E.2.4 Laboratory Control Samples

The LCS/LCSD samples were prepared by adding spike compounds to blank samples in order to assess laboratory extraction and instrumentation performance. The LCS/LCSD recoveries and/or RPDs were within laboratory and project limits and did not result in qualification of the data.

#### E.2.5 Matrix Spike Sample and Sample Duplicates

MS samples are typically prepared by adding spike compounds to project samples to assess potential matrix interference. The MS/MSD and/or RPDs were within laboratory and project limits and did not result in qualification of the data.

#### E.2.6 Surrogates and Isotope Dilution Analyte Recovery

Isotope dilution analyte (IDA) or surrogate compounds were added to project samples by the laboratory prior to analysis, in accordance with method requirements. Recoveries were then calculated as percentages and reported by the laboratory as a measure of analytical extraction efficiency. IDA and surrogate recoveries were inside the established control limits with the following exceptions:

- Soil WO 320-75270-1
  - The recoveries of the IDAs 13C2 PFUnA, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in sample *KD3-SS*. The non-detect perfluoroundecanoic acid (PFUnA), N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA), and N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) results of the sample *KD3-SS* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
  - The recovery of the IDAs 13C2 PFHxA, C4 PFHpA, 13C4 PFOA, 13C2 PFDoA, and 13C4 PFOS were below the laboratory's lower control limits in the sample *KD3-SUB1*. The non-detect perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA), perfluorododecanoic acid (PFDoA), and PFOS results of the sample *KD3-SUB1* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
  - The recovery of the IDAs 13C2 PFHxA, 13C4 PFOA, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, 18O2 PFHxS, 13C4 PFOS, d3-NMeFOSAA and 13C3 HFPO-DA were below the laboratory's lower control limits in the sample *KD3-SUB2*. The non-detect PFHxA, PFOA, perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), PFUnA, PFDoA, perfluorotetradecanoic acid (PFTeA), PFOS, NMeFOSAA, and hexafluoropropylene oxide dimer (HFPO-DA) results of the sample *KD3-SUB2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.

- The recovery of the IDAs 13C2 PFDoA, 13C2 PFTeDA, and d5-NEtFOSAA were below the laboratory's lower control limits in the sample *HOM14-SUB1*. The non-detect PFDoA, PFTeA, and NEtFOSAA results of the sample *HOM14-SUB1* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
- The recovery of the IDAs C4 PFHpA, 13C4 PFOA, 13C5 PFNA, 13C2 PFUnA, 18O2 PFHxS, 13C4 PFOS, d3-NMeFOSAA and 13C3 HFPO-DA were below the laboratory's lower control limits in the sample *HOM14-SUB2*. The non-detect PFHpA, PFOA, PFNA, PFUnA, perfluorohexanesulfonic acid (PFHxS), PFOS, NMeFOSAA, and HFPO-DA results of the sample *HOM14-SUB2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
- The recovery of the IDAs 13C4 PFOA, 13C5 PFNA, 13C2 PFDA, 13C2 PFDoA, 13C4 PFOS, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in the sample *HOM14D-SS*. The non-detect PFOA, PFNA, PFDA, PFDoA, PFOS, NMeFOSAA, and NEtFOSAA results of the sample *HOM14D-SS* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
- Groundwater/Surface Water WO 320-75273-1
  - The recoveries of the IDAs 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, d3-NMeFOSAA and d5-NEtFOSAA were below the laboratory's lower control limits in sample *KD3-GW*. The non-detect perfluoroundecanoic acid (PFUnA), perfluorododecanoic acid (PFDoA), perfluorotetradecanoic acid (PFTeA), N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA), and N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) results of the sample *KD3-GW* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
  - The recovery of the IDA 13C2 PFTeDA was below the laboratory's lower control limit in the samples *HOM6-GW* and *HOM-SW-2*. The non-detect PFTeA results of samples *HOM6-GW* and *HOM-SW-2* are considered estimated and flagged 'UJ' due to the low IDA recoveries.
  - The recoveries of the IDAs 13C2 PFHxA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, 13C2 PFTeDA, d3-NMeFOSAA, d5-NEtFOSAA, and 13C3 HFPO-DA were below the laboratory's lower control limits in sample *HOM-SW-3*. The non-detect PFUnA, PFDoA, PFTeA, NMeFOSAA, NEtFOSAA, and hexafluoropropylene oxide dimer acid (HFPO-DA) results of the sample *HOM-SW-3* are considered estimated and flagged 'UJ' due to the low IDA recoveries. Similarly, the detected perfluorohexanoic acid (PFHxA) and perfluorodecanoic acid (PFDA) results of sample *HOM-SW-3* are considered estimated and flagged 'J' due to the low IDA recoveries.
- Groundwater/Surface Water WO 1213521
  - The recoveries of the PAH surrogates 2-methylnaphthalene-d10 and fluoranthene-d10 were grossly below (<20%) the laboratory's lower control limits in the field sample *HOM6-GW*. However, the method blank sample associated with preparatory batch XXX45025 also had low recoveries for these surrogates, indicating it was not

likely a matrix issue that resulted in the recovery failures but rather a laboratory QC issue. This is further supported by the out-of-hold re-extraction results confirming the initial extraction results. PAHs were not detected in the sample *HOM6-GW*. We consider the PAH results of this sample to be estimated non-detections and the results are flagged 'UJ' for reporting purposes.

### E.2.7 Field Duplicates

One field duplicate sample was collected and submitted to the laboratory as a blind sample with every WO. Field duplicate samples were collected at a minimum frequency of 10 percent. Field duplicates met the GWP guidelines of 30% for water samples in all WOs and are considered comparable, with the following exceptions

- Groundwater WO 1213521
  - The field duplicate samples *HOM5-GW* and *HOM5D-GW* were submitted with this sample batch. While not explicitly identified as a duplicate on the COC, the labeling convention for the duplicate sample was not discrete enough for the sample to be considered "blind." The relative precision demonstrated between the detected results of the field duplicate samples met the recommended DQO of 30%, where calculable, except for phenanthrene and residual range organics (RRO). The phenanthrene and RRO results of the samples *HOM5-GW* and *HOM5D-GW* are considered estimated and flagged 'J' to identify the imprecision.
- Soil WO 320-75270-1
  - The relative precision demonstrated between the detected results of the field duplicate samples met the recommended DQO of 50% for all analytes except for PFOS in field duplicate pair *HOM11-SS/HOM11D-SS*, and PFHxS in field duplicate pair *HOM14-SS/HOM14D-SS*. These analytes in the noted samples are considered estimates with no direction of bias and have been flagged 'J'.

### E.2.8 Analytical Sensitivity

Analytical sensitivity was evaluated to verify that the LODs/RLs met the applicable regulatory levels for non-detect results. All analytes that are non-detect with LODs elevated above cleanup levels are identified in the results tables.

### E.2.9 Additional Flags

- Soil WO 320-75270-1
  - The laboratory applied the I-flag to the perfluorooctanesulfonic acid (PFOS) results of samples *HOM3-SS*, *HOM7-SS*, *HOM13-SS*, *HOM7D-SS*, *BL-SED*, *KD1-SUB2*, and the perfluorohexanesulfonic acid (PFHxS) result of sample *KD1-SS*. The I-flag indicates that the transition mass ratio for the affected analyte was outside of the

established ratio limits. The case narrative states that the qualitative identification of the affected analytes has some degree of uncertainty, and the reported values may have some high bias. However, analyst judgment was used to positively identify the analyte. Due to this uncertainty the, noted analytes in the aforementioned samples are considered estimates, with no direction of bias, and have been flagged 'J' in the results table.

### E.3 SUMMARY OF QUALIFIED RESULTS

Overall, the data validation process deemed the water supply well project data acceptable for use with the minor exceptions noted above resulting in qualification of the data. We did not reject any analytical results due to failures with laboratory QC samples, sample handling, or other issues. Flags can be found in the associated analytical summary tables.

### E.4 COMPLETENESS

No data were rejected pursuant to the data quality review, and data may be used, as qualified, for the purposes of the DOT&PF Statewide PFAS Addendum 004-HOM-01.



Appendix F

# Conceptual Site Model

APPENDIX F: CONCEPTUAL SITE MODEL

# Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

**Site Name:**

**File Number:**

**Completed by:**

### Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

*General Instructions: Follow the italicized instructions in each section below.*

### 1. General Information:

**Sources** *(check potential sources at the site)*

- |  |   |
|--|---|
| <input type="checkbox"/> USTs                          | <input type="checkbox"/> Vehicles   |
| <input type="checkbox"/> ASTs                          | <input type="checkbox"/> Landfills  |
| <input type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers   |
| <input type="checkbox"/> Drums                         | <input checked="" type="checkbox"/> Other: <input type="text" value="Aqueous Film Forming Foam (AFFF) release."/> |

**Release Mechanisms** *(check potential release mechanisms at the site)*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Spills | <input checked="" type="checkbox"/> Direct discharge |
| <input checked="" type="checkbox"/> Leaks  | <input type="checkbox"/> Burning                     |
|  | <input type="checkbox"/> Other: <input type="text"/> |

**Impacted Media** *(check potentially-impacted media at the site)*

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface soil (0-2 feet bgs*)  | <input checked="" type="checkbox"/> Groundwater      |
| <input checked="" type="checkbox"/> Subsurface soil (>2 feet bgs) | <input checked="" type="checkbox"/> Surface water    |
| <input type="checkbox"/> Air                                      | <input type="checkbox"/> Biota                       |
| <input checked="" type="checkbox"/> Sediment                      | <input type="checkbox"/> Other: <input type="text"/> |

**Receptors** *(check receptors that could be affected by contamination at the site)*

- |   |   |
|---|---|
| <input type="checkbox"/> Residents (adult or child)                                 | <input checked="" type="checkbox"/> Site visitor      |
| <input checked="" type="checkbox"/> Commercial or industrial worker                 | <input checked="" type="checkbox"/> Trespasser        |
| <input checked="" type="checkbox"/> Construction worker                             | <input checked="" type="checkbox"/> Recreational user |
| <input checked="" type="checkbox"/> Subsistence harvester (i.e. gathers wild foods) | <input type="checkbox"/> Farmer                       |
| <input checked="" type="checkbox"/> Subsistence consumer (i.e. eats wild foods)     | <input type="checkbox"/> Other: <input type="text"/>  |

\* bgs - below ground surface

**2. Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

*If the box is checked, label this pathway complete:*

Complete

Comments:

PFOS, PFOA, and DRO were detected above their respective regulatory limits in site surface soil samples. Additionally, PFOS was detected above its regulatory limit in a surface sediment sample from Beluga Lake.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

PFOS, PFOA, and DRO were detected above their respective regulatory limits in site surface soil samples. Additionally, PFOS was detected above its regulatory limit in a surface sediment sample from Beluga Lake.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

Groundwater beneath the site tends to have high salinity concentrations, but it is not currently known if DEC has officially determined that the groundwater is not a current or reasonable expected future drinking water source.

## 2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

PFOS was detected in a surface water sample above its regulatory limit. While site surface water is unlikely to be used for drinking water there is potential for incidental ingestion of surface water.

## 3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)

*If all of the boxes are checked, label this pathway complete:*

Complete

Comments:

PFOS was detected above its regulatory level in a Beluga Lake sediment sample and an off-site surface soil sample (collected between the site boundary and Beluga Lake).

### c) Inhalation-

#### 1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Are the contaminants in soil volatile (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

## 2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

PFOS, PFOA, and DRO contamination were not detected within the prescribed horizontal or vertical feet of occupied buildings.

**3. Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

**Dermal Exposure to Contaminants in Groundwater and Surface Water**

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

*Check the box if further evaluation of this pathway is needed:*

Comments:

**Inhalation of Volatile Compounds in Tap Water**

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

*Check the box if further evaluation of this pathway is needed:*

Comments:

## Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM<sub>10</sub>). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

*Check the box if further evaluation of this pathway is needed:*

Comments:

## Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

*Check the box if further evaluation of this pathway is needed:*

Comments:

**4. Other Comments** *(Provide other comments as necessary to support the information provided in this form.)*



# HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: DOT&PF Homer Airport  
N/A

Completed By: Ashley Jaramillo  
 Date Completed: 3/5/2022

**Instructions:** Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Check the media that could be directly affected by the release.	(2) For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.
Media	Transport Mechanisms
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Runoff or erosion <i>check surface water</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Flow to surface water body <i>check surface water</i> <input checked="" type="checkbox"/> Flow to sediment <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Surface Water	<input checked="" type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Sedimentation <i>check sediment</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Direct release to sediment <i>check sediment</i> <input checked="" type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(3) Check all exposure media identified in (2).	(4) Check all pathways that could be complete. The pathways identified in this column must agree with Sections 2 and 3 of the Human Health CSM Scoping Form.	(5) Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.																								
Exposure Media	Exposure Pathway/Route	Current & Future Receptors																								
		Residents (adults or children)   Commercial or Industrial workers   Site visitors, trespassers, or recreational users   Construction workers   Farmers or subsistence harvesters   Subsistence consumers   Other																								
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input checked="" type="checkbox"/> Inhalation of Fugitive Dust	<table border="1"> <tr> <td></td> <td></td> <td></td> <td>C/F</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>C/F</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>C/F</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				C/F								C/F								C/F				
			C/F																							
			C/F																							
			C/F																							
<input checked="" type="checkbox"/> groundwater	<input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	<table border="1"> <tr> <td></td> <td></td> <td></td> <td>C/F</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>C/F</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>				C/F								C/F												
			C/F																							
			C/F																							
<input type="checkbox"/> air	<input type="checkbox"/> Inhalation of Outdoor Air <input type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust	<table border="1"> <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> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																								
<input checked="" type="checkbox"/> surface water	<input checked="" type="checkbox"/> Ingestion of Surface Water <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	<table border="1"> <tr> <td></td> <td>C/F</td> <td></td> <td>C/F</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> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		C/F		C/F																				
	C/F		C/F																							
<input checked="" type="checkbox"/> sediment	<input checked="" type="checkbox"/> Direct Contact with Sediment	<table border="1"> <tr> <td></td> <td>C/F</td> <td></td> <td>C/F</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> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		C/F		C/F																				
	C/F		C/F																							
<input checked="" type="checkbox"/> biota	<input checked="" type="checkbox"/> Ingestion of Wild or Farmed Foods	<table border="1"> <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> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																								

# Important Information

About Your Environmental Report

IMPORTANT INFORMATION

### CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

### THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

### SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

### MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining

your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

#### A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

#### THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

#### BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

#### READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims

being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

**The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland**

IMPORTANT INFORMATION