Appendix D
Hazardous Materials, Pollution Prevention, and Solid Waste Impact Documentation

Project Number: NFAPT00549

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FINAL REV 2

CONTAMINATED SOILS MANAGEMENT PLAN (CSMP)

Deadhorse Airport (SCC) Improvements Project NFAPT00549

AIP 3-02-0339-XXX-20XX

DEADHORSE, ALASKA

SHANNON & WILSON

January 2023

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Submitted To: Stantec Consulting Services, Inc.
2515 A Street
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Subject: FINAL REV 2 CONTAMINATED SOILS MANAGEMENT PLAN (CSMP),
DEADHORSE AIRPORT (SCC)
IMPROVEMENTS PROJECT NFAPT00549
AIP 3-02-0339-XXX-20XX, DEADHORSE, ALASKA

Shannon & Wilson (S&W) prepared this revised Contaminated Soils Management Plan (CSMP) and participated in this project as a subconsultant to Stantec Consulting Services, Inc. The recommendations supersede those provided in the previous versions of this CSMP. Our scope of services was specified in Agreement Number 25-21-1-016 Amendment 5 and was approved by Mr. Andrew Niemiec on September 27, 2022. This CSMP shall be used as guidance for contractors handling, transporting, and storing potentially contaminated materials related to the Deadhorse Airport (SCC) Improvements Project NFAPT00549 (AIP 3-02-0339-XXX-20XX) and was prepared by the undersigned.

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.

Michael Jaramillo
Senior Chemist

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ACRONYMS

°F	degree Fahrenheit
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AFFF	aqueous film forming foam
ARFF	aircraft rescue and firefighting
BTEX	benzene, toluene, ethylbenzene, and xylenes
CFR	Code of Federal Regulations
COPC	contaminants of potential concern
CSMP	Contaminated Soils Management Plan
cy	cubic yards
DOT&PF	Alaska Department of Transportation & Public Facilities
DRO	diesel range organics
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
GRO	gasoline range organics
ISM	Incremental Sampling Methodology
MTGW	Migration to Groundwater
PAH	polynuclear aromatic hydrocarbon
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PID	photoionization detector
ppm	parts per million
QEP	qualified environmental professional
QS	qualified sampler
S&W	Shannon & Wilson, Inc.
SCC	Deadhorse Airport

1 INTRODUCTION

This Contaminated Soils Management Plan (CSMP) provides direction for managing contaminated materials during the Alaska Department of Transportation and Public Facilities (DOT&PF) Deadhorse Airport (SCC) Improvements Project (Airport Improvement Project No. AIP 3-02-0339-XXX-20XX) in Deadhorse, Alaska. Where a conflict exists between this CSMP and project plans and specifications, the requirements of the plans and specifications shall prevail.

The Airport Improvement Project includes:

- drainage improvements at SCC, including drainage along Deadhorse Drive;
- relocating utilities impacted by drainage improvements;
- regrading and filling taxiway and apron in-fields for wildlife control and drainage;
- constructing a perimeter wildlife fence and fence service roads (including security fence improvements as may be identified);
- constructing a material site access road, and
- other airport improvements, as requested.

Based on our understanding of the project, ground-disturbing activities are limited to culvert areas and drainage ditches that will be upgraded to improve overall site drainage. The other construction activities will not disturb existing soils.

2 SCOPE

This CSMP includes procedures for the handling and storage of per- and polyfluoroalkyl substances (PFAS) and petroleum contaminated material from soil excavated for the proposed upgrades, transport and stockpiling of potentially contaminated media, equipment decontamination, health and safety, and reporting procedures. The procedures contained in this CSMP do not preclude additional site- or project-specific requirements required to protect the health and safety of workers. The Contractor is responsible for performing due diligence to ensure the safety of their employees.

The CSMP applies to areas with known contamination at SCC identified in Shannon & Wilson's (S&W's) report titled *Preliminary PFAS Investigation Report*, dated July 2022 (Attachment B). If additional information regarding PFAS or other contamination is

provided to DOT&PF during the project, DOT&PF will inform the Contractor of the new information. No changes will be made to this CSMP nor implemented in the field without first notifying and obtaining approval from the Alaska Department of Environmental Conservation (ADEC).

Due to the presence of PFAS- and fuel-contaminated soils present within the project area, the contractor will have environmental field activities performed by a Qualified Environmental Professional (QEP) or Qualified Sampler (QS), as defined by Alaska Administrative Code (AAC) 18 AAC 75.333. The selected Contractor that will be conducting the airport upgrades will provide DOT&PF and ADEC a list of names and qualifications for the project QEP and/or QS prior to the start of the project.

3 SITE DESCRIPTION

Deadhorse is in northern Alaska to the south of Prudhoe Bay. The SCC is located at 1 Airport Way in Deadhorse, Alaska. The geographic coordinates of the SCC are 70.1992° North and 148.4555° West (Attachment A – Figure 1). The airport is state-owned and operated by DOT&PF.

Deadhorse lies within the Teshekpuk Lake section of the Arctic Coastal Plain physiographic province of Alaska (Pewe 1983). The section is a smooth, flat plain rising from the Arctic Ocean to an altitude of roughly 600 feet at the southern margin. The area has not been glaciated. Typical land features include shallow marshes, thaw lakes, braided meandering rivers, scattered sand dunes, ice-wedge polygons, and pingos, which are domed shaped mounds that consist of a layer of soil over a core of ice that only occur in permafrost areas. The Teshekpuk Lake section is underlain by unconsolidated Quaternary marine sediments overlying Cretaceous sedimentary rocks (Wahrhaftig 1965).

The SCC is within the arctic zone which is underlain by continuous permafrost layer that acts as a barrier to prevent downward migration of surface water to groundwater. The active layer of seasonally frozen surficial soil ranges from 0.5 to 4 feet thick.

Ice-wedge polygons are nearly continuous in the area of the airport. Polygon diameters range from 20 feet to more than 100 feet. The polygons are typically low centered with raised edges. Massive ice is expected around the perimeter of the polygons where ice wedges actively form.

4 SUMMARY OF KNOWN CONTAMINATION

The SCC is a Title 14, Code of Federal Regulations (CFR), Part 139 certified airport. Part 139 certification is administrated by the Federal Aviation Administration (FAA) and serves to ensure air transportation safety by requiring, among other things, the provision of aircraft rescue and firefighting (ARFF) services.

Aqueous film forming foam (AFFF) is an FAA-approved extinguishing agent for ARFF response at Part 139 airports. AFFF is a surfactant that effectively and rapidly suppresses flammable-liquid fires and is known to contain PFAS. PFAS are persistent in the environment and human body, causing potential adverse health effects. Historical use of AFFF during ARFF training and/or emergency response activities at SCC may have led to PFAS contamination of environmental media at and near these locations.

Based on information provided by DOT&PF for the initial PFAS investigation, there are several known AFFF release areas: Taxiway A East, Taxiway A West, and the Terminal Apron (Attachment A – Figure 2). In addition, the ADEC contaminated sites website (visited October 12, 2022) lists several contaminated sites near the project sites that are listed as "active" or "cleanup complete with institutional controls" (Attachment A – Figure 2). Primary contaminants of potential concern (COPCs) for these sites include gasoline range organics (GRO), diesel range organics (DRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs). Exhibit 4-1 provides a summary of contaminated sites in the project area that are designated as either "active" or "cleanup complete with institutional controls.

Exhibit 4-1: Contaminated Sites Summary

ADEC Site Name (Location)	DEC File Number	Status	Description
NANA Oilfield Services Tank Farm (Block 303)	300.38.296	Active	During liner replacement activities in September 2010, petroleum-contaminated soil was discovered beneath Tank 3 at the NANA Oilfield Services tank farm on Block 303, Lot 1 of the Deadhorse Airport. Site investigation activities in April 2011 determined that GRO, DRO, and xylenes were present above ADEC cleanup levels. Soil and surface water had concentrations for fuels above ADEC CULs.
NANA Oilfield Services Fuel Station (Block 301 Lot 2B)	300.38.298	Active	On December 27, 2010, a stain was observed at the NANA Oilfield Services fuel station at the Deadhorse airport. Over the course of the year, as the snow melted, it became apparent that multiple releases had occurred. Soil sampled near each of the fueling areas indicated petroleum contamination above cleanup levels was present. Soil had concentrations for fuels above ADEC CULs but surface water samples were below ADEC CULs.

ADEC Site Name (Location)	DEC File Number	Status	Description
ADOT&PF Deadhorse Airport Block 304 Lot 1B (Block 304 Lot 1B)	300.38.287	Active	On August 24,2009, DOT&PF staff discovered DRO contamination during installation of a culvert in a gravel driveway on Lot 1B, Block 304 Deadhorse Airport. A tanker trailer used as a fueling station was observed directly adjacent to where the contaminated soil was found. When notified, Carlile immediately had the trailer towed to Fairbanks and secured on their lot. DOT&PF treated the contaminated water and soil that were removed during the culvert installation. Soils had concentrations for fuels above ADEC CULs.
ADOT&PF Deadhorse Airport Block 304 Lot 2A (Block 304 Lot 2A)	300.38.318	Active	In June 2015 two test pits were advanced on Lot 2A of Block 304 at the Deadhorse airport to verify the presence or absence of contamination from onsite and offsite sources. Results of the investigation revealed that contamination was present in the soils on the southwestern portion of the property, in the in the vicinity of one or more former above ground storage tanks (ASTs) removed in 2009. DRO was identified at 1,540 mg/kg, which exceeds ADEC cleanup levels. The extent of this contamination has not been fully delineated.
ERA Aviation Deadhorse Spill (ERA Aviation Terminal; Block 900 Lot 5A)	300.38.151	Active	In 1997, 10 to 12 gallons of Jet-B fuel released into the subsurface soil from the fuel hydrant piping system leak between the west and east hangers. Elevated levels of GRO, DRO, and BTEX (benzene, toluene, ethylbenzene, and xylenes) were encountered in groundwater and soil collected from soil borings during the release investigation.
Former Sea Air Motive Pad (Block 900 Lots 2 and 3)	300.38.015	Cleanup Complete – with ICs	In 1991, eleven borings drilled on lots 3 and 4. All of the borings had some petroleum hydrocarbon contamination. Several underground storage tanks (USTs) were noted on site. A partially buried oil water separator with petroleum hydrocarbons was noted on site. Several areas of hydrocarbon staining were observed. Lease holder was AIDEA, site assessment requested by ERA Aviation. In 2004, approximately 2,378 cy of petroleum contaminated soil was removed from the site and land farmed nearby. Based on the information provided, ADEC has determined that no further remedial action is required for the former Sea Air Motive site (Lease Lots 2 and 3, Block 900). This decision evaluated the contaminant concentrations remaining on site and determined there is no unacceptable risk to human health or the environment. Any proposal to transport soil off site requires ADEC approval in accordance with 18 AAC 75.325(i).

ADEC Site Name (Location)	DEC File Number	Status	Description
Arctic Utilities, Inc., Nana, TDX (Block 301 Lot 2A)	300.38.157	Cleanup Complete – with ICs	The subject site located on the Deadhorse Airport (under lease from DOT&PF) has been used as an electrical generating facility and oil field service support area since the 1970's. It has reportedly been impacted by petroleum hydrocarbons over the years from the storage and use of diesel fuel product. NANA Oilfield Services, Inc. also operated a maintenance shop on site that may have contributed to the contamination. The NANA pad (Lot 2, Block 301) was split into Lot 2A and 2B. Lot 2A was the electric power generator site and transferred to TDX North Slope Generating Inc. in January 2003. The following institutional controls will be recorded in the ADEC database: (1) hazardous substance contamination remains on site above the established cleanup (or target) levels. Soil samples were collected from the limits of the excavation in areas B10 and D11 and from soil borings around the buildings. The contaminant concentrations remaining on site ranged from 2140 to 5730 mg/kg DRO and 87 to 173 mg/kg xylene. (2) Any proposal to transport soil off site requires ADEC approval in accordance with 18 AAC 75.325(i).
ADOT&PF Deadhorse Blk 700 Lots 7A & 8 (Block 700 Lots 7A & 8)	300.38.177	Cleanup Complete – with ICs	DOT&PF currently occupies the subject lease lots. Lot 7A supports a maintenance facility for State vehicles, airport services, and heavy equipment storage. Lot 8 borders the western portion of the gravel pad supporting the maintenance shop facilities. During AGRA's 1992 Phase I Assessment of this property, heavily stained surface soils were observed both inside and around the shop facilities. In addition, AGRA noted that some pond surface waters on Lot 8 exhibited a petroleum-type sheen. The phase I pointed to the following areas of concern: drum and materials storage area on the eastern side of the warm storage building, the subsurface soils surrounding the on-site ASTs, the area surrounding the fuel dispensing station, and the maintenance shop floor. During the phase II assessment, AGRA advanced 33 soil borings throughout Lots 7A and 8. The analytical results found no benzene present in any of the samples. Elevated levels of xylene (up to 130 mg/kg) were found as well as DRPH samples (up to 17,000 mg/kg) were found on-site. The elevated DRPH samples were found inside the two shop buildings. Tetrachloroethene was found at a concentration of 3.2 mg/kg. Site Characterization Report dated June 19, 2009. Four soil borings were advanced inside the Shop Building to evaluate contaminant concentrations detected in the 1994 investigation. Soil borings were advanced to a depth of 15 feet bgs and two soil samples were collected from each borehole and analyzed for DRO, RRO, GRO, VOCs, PAHs, and PCBs. DRO was detected up to 3,760 mg/kg in borehole 2 at 8.5 to 11 feet bgs and benzene was detected up to 0.0238 mg/kg borehole 5 at 6-10.5 feet bgs. PCBs were not detected in any sample and PAHs were not detected above cleanup levels. The chlorinated solvents initially detected in the 1994 samples were not detected in 2009 samples.

In June 2022, S&W completed a preliminary investigation to characterize soil for PFAS and additional COPCs to provide analytical results prior to the improvement project at the SCC. S&W's areas of investigation focused near the culvert areas where excavation is planned to improve the drainage along Deadhorse Drive and within the secured area of the SCC. S&W identified multiple PFAS in the surface soil in these investigation areas, including perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). PFOS was detected in several locations at concentrations exceeding the ADEC soil Migration to Groundwater (MTGW) Cleanup Levels (Appendix A – Figures 3 through 8). Additionally, S&W identified benzene in one soil sample at concentrations exceeding the ADEC MTGW Cleanup Level, which also exceeded for PFOS.

While the ADEC MTGW Cleanup Levels will be used to classify varying levels of PFAS contamination present in soils for the purpose of this CSMP, the ADEC *Establishing Arctic Zone Cleanup Levels* Technical Memorandum dated April 4, 2019, states that the MTGW Cleanup Levels are not enforced in areas of the state where the continuous permafrost layer acts as a barrier to prevent downward migration of contaminants to groundwater. The Technical Memorandum mentions that surface and pore water are of more of a concern for contaminant migration in the arctic, and we note that in recent discussions with ADEC they mentioned that pore water and surface waters may be required for site characterization activities for a given site. Thus, the analytical soil results were also compared to and found to be below the ADEC Arctic Zone – Human Health Cleanup Levels. Based on these results, it is unlikely that excess soils will be required to be removed from the site for disposal or treatment purposes if the final stockpile results are also less than the ADEC Arctic Zone – Human Health Cleanup Levels. Further discussion regarding stockpiles and soil spreading with regards surface water drainage is provided in Section 6.

A copy of S&W's analytical report is provided as Attachment B that compare results to both the ADEC MTGW and Arctic Zone – Human Health Cleanup Levels. The analytical report provides preliminary information to help the Contractor develop an approach to segregating contaminated media during construction. It is the contractor's responsibility to adequately characterize soil generated during this project for waste-disposal purposes. Our report also includes maps that display the analytical results from the June 2022 preliminary sampling.

5 CONTAMINANTS OF POTENTIAL CONCERN

Based on the information available for this project, the primary COPCs for the site are PFOS and benzene. However, since the preliminary environmental sampling is limited to the

areas sampled, this CSMP includes sampling for the additional fuel analyses GRO, DRO, RRO, BTEX, and PAHs as well as the full list of PFAS analytes for the given analytical method. The overall improvement project will not include ground disturbances at AFFF training areas, although several culvert replacements are adjacent to or along the drainage system associated with the AFFF training areas.

Soils that are identified as potentially contaminated with fuel COPCs (refer to Section 6.1 for determination of potentially contaminated soils) will be stockpiled based on the sections below; samples collected from the stockpile/s will be analyzed for GRO, DRO, RRO, BTEX, PAH, and PFAS analyses for the purposes of understanding disposal and/or treatment requirements. The analytical results will be compared to the ADEC 18 AAC 75.341 Table B1. Method Two and Table B2. Method Two Arctic Zone – Human Health Cleanup Levels to determine if the soils will require removal from the site or if the soils can be spread at the site.

6 SEGREGATION OF CONTAMINATED SOIL

Design plans for the airport improvements project describe upgrading drainage areas, including removal of culverts and regrading of the drainage ditches. The design plans assume some of the excavated material will be reused in the areas they were obtained. Excess soils that are not planned for reuse will be segregated based on criteria defined in this section.

Soil classification/segregation is necessary to avoid spreading excess soils from areas with higher levels of contaminants to areas of lower contaminant concentrations or areas where contaminants have not been detected. Furthermore, segregation assists with preventing non-contaminated soils from being grouped with soils with detectable contaminant concentrations and generating larger stockpiles that may be expensive to dispose of.

Field screening for volatile fuel contaminants will be limited to areas along Deadhorse Drive within 200-feet of the active contaminated sites (ADEC File numbers 300.38.287, 300.38.296, and 300.38.298; Figure 2). Excavated soils within these buffer areas will be field screened with a photoionization detector (PID) to assess the presence of volatile fuel contaminants for soil segregation purposes. Additional details regarding the field screening method are provided in the following section. Unlike fuel-contaminated soil, field-screening methods are not available for PFAS-contaminated soil to assist in stockpile segregation. Therefore, the excavation areas will be classified based the initial PFAS analytical results (Attachments A and B). The figures presented in Attachment A presented three levels of PFAS

contamination at the site: (1) PFOS detected above the MTGW Cleanup Level, (2) PFOS detected below the MTGW Cleanup Level, and (3) PFOS not detected.

If excess soils do not indicate the presence of fuels, the soils will be used as fill in the area identified in Appendix A – Figure 7. This area meets several requirements for land spreading. Firstly, this area is already scheduled to be filled for wildlife control as part of this SCC improvement project. Additionally, the area was identified as having one of the highest PFAS detections for the site during the initial PFAS investigation, which would allow excess soils from the three different PFAS categories to be spread in the area. Lastly, due to the presence of the continuous permafrost layer in this area, transport of contaminants to groundwater is unlikely, although we note that surface water may mobilize contaminants in Deadhorse.

The area identified in Appendix A – Figure 7 draining towards the wetlands and waterbodies to the west of the SCC. The selection of this area for spreading excess soils avoids potential transport of PFAS contaminants towards the drinking water source protection area for the Sagavanirktok River, which is the drinking water source for the North Slope Borough SA 10 Public Water System (ID AK2331184) as identified in the ADEC Drinking Water Source Protection Areas Map (2022b).

If soils do indicate the presence of fuel, as described in the section below, soils will be stockpiled in accordance with Section 9. Soils from areas where PFAS was detected previously should be segregated and stockpiled separately from soils from areas where PFAS was not detected. Based on the initial sampling event, this scenario is unlikely, but should be taken into consideration if fuel-contaminated soils are encountered in different areas.

Stockpiles will be built and maintained in accordance with Section 9.

6.1 Field Screening for Fuel Contaminants

The preliminary S&W investigation for this project included collecting analytical samples from soils within approximately 500 feet of recorded ADEC contaminated sites with "active" or "cleanup complete with institutional controls" status. The results from the investigation identified 20 of the 24 samples collected for fuels analysis contained detectable quantities of DRO and/or other fuel components. Based on this information, field screening for fuel contaminants will be limited to earth disturbing activities along Deadhorse Drive and areas east of Taxiway C.

The Contractor will provide a QEP/QS to field screen excavated soils. The QEP/QS will use a hand-held PID equipped with a 10.6 electron volt lamp to detect volatile fuel compounds. The PID measures total volatile compounds present as vapors, which is a semi-quantitative indication of hydrocarbons present. The PID will be calibrated daily, or more often as needed, to a 100-ppm isobutylene standard according to the manufacturer's instructions. The QEP/QS will be trained and experienced in the calibration, operation, routine maintenance, and troubleshooting of the PID, as well as interpreting PID results.

The QEP/QS will collect field screening samples at frequency of 1 for every 10 cubic yards (cy) of excavated soil. Field screening samples will be collected using a clean, stainless-steel spoon from freshly uncovered soil (directly from the excavator bucket or side-cast material) and place the soil in a clean, resealable plastic bag, filling it one-third to one-half full and quickly sealing it closed. The field screening samples will be analyzed using the heated-headspace method defined below.

The QEP/QS will allow the headspace to develop in the bag by warming it to at least 40 degrees Fahrenheit (°F) for 10 minutes to one hour and shaking the bag for 15 seconds at the beginning and end of the period to assist volatilization. The QEP/QS will open the bag just enough to allow insertion of the PID probe about one-half the headspace depth, taking care to avoid uptake of water droplets and soil particles. The QEP/QS will record the maximum PID reading obtained, noting any erratic meter response at high organic-vapor concentrations or conditions of elevated headspace moisture.

With respect to fuel contaminants, soils will be categorized as potentially clean or potentially contaminated based on the following criteria.

- Potentially clean soil will not exhibit visible staining or fuel odor, and headspace field-screening results will be less than 10 parts per million (ppm).
- Soils with visible staining, fuel odor, or headspace field-screening results greater than 10 ppm will be considered potentially fuel-contaminated soil.

Potentially clean soils can be reused in the originating excavation area. Excess soils identified as potentially clean soils will be spread in the approved location. Potentially fuel-contaminated soils will be stockpiled and sampled in accordance with Section 9.

In addition to managing petroleum contaminated soils, work conducted near the identified contaminated sites may encounter petroleum product on water. Best Management Practices will be implemented in these areas where a sheen is observed on surface water to remove the sheen using sorbent pads or containment booms, to the extent practicable.

7 EXCAVATED SOIL SPREADING OR STORAGE AND CHARACTERIZATION

If excavated soils identified as potentially clean soil require temporary storage prior to returning to the excavation area or transportation to the designated fill area (Appendix A – Figure 7), the soils will be placed on a liner near the excavation origin. Soil shall be returned to the excavation area or transported to the designated fill area within 24 hours of completing work at the specific excavation.

Excess soils identified as potentially fuel-contaminated by field screening or field observations will be stockpiled as described in Section 9. The SCC Airport Manager will select the contaminated soils stockpile areas based on the proximity to excavation areas, existing land use and operations at SCC, and additional criteria defined in Section 9. Contractors shall document the quantity of soil returned to each excavation area, used as fill for project drainage upgrades, or stockpiled/spread.

The analytical results included in Shannon & Wilson's *Preliminary PFAS Investigation Report* are not to be used for final waste characterization purposes. The Contractor shall perform additional analytical sampling of the stockpiles for waste-characterization purposes in accordance with Section 10. Following receipt of the analytical results, the Contractor shall provide the stockpile results to DOT&PF and ADEC. Materials exceeding ADEC Arctic Zone – Human Health regulatory limits for any analyte shall require approval to transport to a disposal or treatment facility. Soils with analytical results below the ADEC Arctic Zone – Human Health regulatory limits may be used as fill or spread in the area defined in Appendix A – Figure 7, pending ADEC approval.

8 EXCAVATION PROCEDURES FOR SOILS

1. Excavation activities shall be performed in a manner that minimizes worker exposure to contaminants in soil and does not result in a release of contamination or unacceptable exposure risk to human health and/or the environment.
2. A designated work area shall be established around the known PFAS contamination excavation areas. Potentially clean soil that cannot be backfilled at the original excavation area will be removed and loaded into dump trucks and transported to the designated fill area. Trucks will enter and exit the work area through a single-entry point.

3. If excavated soil needs to be temporarily stored prior to returning the soil to the original excavation, it will be placed on a liner near the excavation origin. Soil shall be returned to the excavation area or be transported to the appropriate storage site within 24 hours of completing work at the specific excavation.
4. All equipment leaving work areas where potentially fuel-contaminated soils are identified will be decontaminated before driving to the stockpile area. If equipment contacts contaminated soil in the stockpile area, it will also be decontaminated prior to leaving the stockpile area. See the decontamination procedures below for a description of procedures in Section 11.
5. No contaminated soil will be moved into a zone of lesser contamination without a liner.
6. If dewatering is required, the Contractor is responsible for obtaining the necessary permits and approval for dewatering and/or temporary water use from ADEC and Alaska Department of Natural Resources. The Contractor shall include best management practices for dewatering PFAS contaminated groundwater, if encountered.
7. Operators will work from the safety of their respective equipment cabs. Manual labor to excavate soil is not expected but installing the buried fence fabric does require handwork. Personnel will wear proper personal protective equipment and follow decontamination procedures defined in Section 11.

9 STOCKPILE PROCEDURES

This section describes the stockpile general handling requirements listed in 18 AAC 75.370.

1. Stockpiles will be located within the containment areas approved by the SCC Airport Manager, DOT&PF, and ADEC.
2. Stockpiles must be at least 100 feet from surface waters and should not be placed within the ADEC Drinking Water Program – Drinking Water Protection Zones, which are east of Taxiway D.
3. Excavated material must be segregated based on the criteria established in Section 6.
4. Incremental Sampling Methodology (ISM) soil samples shall be collected from the base of each stockpile prior to liner installation. ISM soil samples shall also be collected after stockpile decommissioning. ISM samples will be collected by dividing the stockpile footprint into equivalent subunits, collecting incremental samples from each subunit, and compositing the sample into laboratory provided sample containers. Refer to the Interstate Technology Regulatory Council *Technical/Regulatory Guidance – Incremental Sampling Methodology (ISM) Update*, dated October 2020, for additional information regarding ISM sampling. Samples should be submitted for the following analyses:

- PFAS by Environmental Protection Agency (EPA) Method 537M, or another method required by ADEC at the time of sampling. We note that EPA Method 1633 may be finalized at the time the construction activities occur.
- GRO by AK101
- DRO by AK102
- benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260
- polynuclear aromatic hydrocarbons (PAHs) by EPA Method SW8270-SIM.

5. Contractor shall report the post-stockpile ISM sample results to DOT&PF and ADEC.
6. Stockpiles will be constructed according to the diagram in Attachment C.
7. Stockpiles must be constructed to prevent effluent from migrating to clean areas by using bottom and top impermeable liners. The bottom liner will meet the general strength and thickness requirements as described in Table D found in 18 AAC 75.370 and summarized in Exhibit 9-1 below. The top liner will be a minimum 11-mil product or equivalent.
8. Wattles (dry straw or similar commercial or locally constructed absorbents) will be placed at the base of each stockpile directly in contact with the soil. Wattles will be overlapped by two feet and tied together. Edges of the bottom liner will fold back up and over the wattle and stockpile base by a minimum of five feet to contain any settlement and potential leaks from within. The top liner will overlap the bottom liner's edge by at least three feet.
9. During periods of inactivity or when excavation is complete, stockpile liners and covers will be lashed down with ropes and anchored with 60-pound sandbags, replaced as needed. Efforts shall be made to minimize precipitation from entering the stockpile.
10. Stockpiles shall be adequately marked. Traffic safety cones or candlestick bollards are required around the perimeter of the stockpiles. Four Public Health and Safety Signs (one per side) will be placed around the perimeter of each stockpile at equidistant spacing. The signs will have a durable backboard and be weatherproof with letters readable from 20 feet away showing the following: contaminant/s of concern, point of contact for the Contractor (name and phone number), point of contact for the DOT&PF (name and phone number), state project number, and generation date. Signs will be maintained in readable condition and shall remain in place for the duration of stockpile storage use. Contractors shall use the signage template included in Attachment C.
11. Stockpiles will be regularly inspected and maintained to ensure the covers remain intact, excessive water does not accumulate, wattles remain in place, signs are legible and in place, and safety warning devices (traffic cones or bollards) are present and upright. The Contractor will inspect the stockpiles daily during daily during accumulation. Once stockpile accumulation is complete, the DOT&PF Project Inspector shall approve the stockpile construction specifications and site security. Once approval is given by the

inspector, stockpile inspections will occur once weekly. After the project's completion, the stockpile will be inspected by Deadhorse DOT&PF staff twice a month and after storm/wind events. Inspections will be documented, and records sent biannually to the DOT&PF Statewide Aviation PFAS Program Manager, as described in the Reporting Procedures in Section 13. Any access openings made to the liner (e.g., accidental tears, etc.) shall be immediately sealed off to prevent wind and rain intrusion.

12. DOT&PF does not anticipate leachate will be generated at the stockpile during rain events because contaminated material will be securely covered. In the unlikely event that leachate does occur, it will be pumped into containers within the immediate stockpile area. ADEC will be notified of any leachate accumulation.

Exhibit 9-1: 18 AAC 75 Table D, Bottom Liner Specifications; Long-term storage of petroleum-contaminated solids (180 days to two years)

Method	Coated Fabric	Extruded Fabric
Cold Crack (ASTM D 2136-02(2012), updated 2012)	-60°F	-60°F
Black carbon content (ASTM D 1603-12, updated May 2012)	two percent or greater	two percent or greater
Tensile strength (ASTM D 751-06(2011), updated 2011)	300 pounds (warp)	N/A
Mullen burst (ASTM D 751-06(2011), updated May 2011)	500 pounds per square inch (psi)	N/A
One-inch tensile strength (ASTM D 882- 12, updated August 2012)	N/A	45 pounds (warp)
One inch elongation MD (machine direction)	N/A	625 percent
Nominal thickness	20 mil	20 mil
Oil resistance (ASTM D 471-12a, updated December 2012)	No signs of deteriorate and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73°F	No signs of deteriorate and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73°F

10 DISPOSAL OF CONTAMINATED MEDIA

The analytical results included in the S&W *Preliminary PFAS Investigation Report* are not to be used for final waste- characterization purposes. That preliminary sampling was conducted to assist with project planning and to support development of this CSMP. Soil that is identified as potentially fuel-contaminated soil shall undergo additional sampling for waste characterization. Discrete samples will be collected from the stockpiles in accordance with the ADEC *Field Sampling Guidance* (January 2022). The frequency of field screening

samples and analytical samples to be collected will be consistent with Table 2A of the ADEC *Field Sampling Guidance*. Analytical samples will be analyzed by the methods described in Section 9 of this plan. The Contractor shall seek approval from ADEC prior to transporting the media to a waste disposal facility or to spread the soils.

If stockpile characterization analytical results show PFOS, PFOA, or other COPCs above the associated ADEC Arctic Zone – Human Health Cleanup Levels, the soil will be disposed of at an environmental waste disposal facility or treated at an environmental treatment facility. The Contractor will coordinate approval to transport and disposal of contaminated media with ADEC, DOT&PF, and the approved facility.

If stockpile analytical results show PFOS, PFOA, and other COPCs below the ADEC Arctic Zone – Human Health Cleanup Level, the Contractor and/or DOT&PF shall seek approval from ADEC prior to spreading the material, noting the volume and final destination. The Contractor shall submit a report to ADEC with the stockpile characterization analytical results. As mentioned above, soils must be spread in areas of equal or greater PFAS or other COPC concentrations.

11 DECONTAMINATION PROCEDURES

Contractors will adhere to the following decontamination guidelines to minimize cross-contamination.

1. The excavation of soils contaminated with PFOS above the MTGW Cleanup Level (red category on Figures 1 through 7 in Attachment A) will be completed last to reduce cross-contamination risks.
2. Heavy equipment or hand tools that come in contact with contaminated material from the PFAS Contaminated Storage Site or Category 1 areas will be brushed to remove visible soil before leaving the stockpile storage site or work area boundaries. At the conclusion of work in each area, contractors will decontaminate equipment by using a brush to remove as much soil from the equipment or tooling, as practicable.
3. The Contractor will decontaminate the dump truck bed after the final load from each Category 1 contaminated media excavation area.
4. If the Contractor identifies additional contamination, such as fuel odors or staining, the Contractor will report this to DOT&PF and decontaminate heavy equipment prior to leaving the work area. The Contractor shall adhere to field screening procedures described in Section 6.

5. Decontaminated equipment will be visually inspected for residual soil periodically to ensure decontamination procedures are effective.

12 HEALTH AND SAFETY PROCEDURES

DOT&PF Environmental Staff or the DOT&PF Regional Environmental Manager will provide training to personnel working on or near the project site. The Contractor will keep a log of trained personnel. The training will cover an introduction to PFAS compounds, potential exposure pathways, and human health/ecological effects.

Contractors will provide a Health and Safety plan that will identify the minimum requirements for working with PFAS and fuel contaminated soils.

13 REPORTING PROCEDURES

When project work is complete, the Contractor will submit a report to the DOT&PF and ADEC. The report will include the following items.

1. A summary of soil movement including the quantity and location of materials returned to each of their excavations, transported to the designated fill area (Appendix A – Figure 7), and stockpiled material.
2. Date and time of daily stockpile inspections during active construction to describe the condition of the stockpile and photographs. The Contractor shall note any accumulation of leachate within liners.
3. Condition of the Stockpile Storage Sites before and after construction activities.
4. Stockpile characterization analytical results and copies of the approved ADEC Transport, Treatment or Disposal Approval Form.

The Contractor shall provide DOT&PF with the stockpile inspection information collected during the project. DOT&PF staff will submit documentation of the stockpile inspections, including a log of date, time, and any necessary notes such as accidental tears, flooding in the area, leachate, etc. to ADEC. The report should also include photos .

14 REFERENCES

Alaska Department of Environmental Conservation, *Contaminated Sites Search*, State of Alaska (2022a), accessed 12 October 2022 on <https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search/>.

Alaska Department of Environmental Conservation, *Drinking Water Protection Areas Map*, State of Alaska (2022b), accessed 12 October 2022 on <https://dec.alaska.gov/eh/dw/dwp/protection-areas-map/>.

Alaska Department of Environmental Conservation, January 2022, *Field Sampling Guidance*, accessible on <https://dec.alaska.gov/spar/csp/guidance-forms>.

Alaska Department of Environmental Conservation, 4 April 2019, *Technical Memorandum – Establishing Arctic Zone Cleanup Levels*, accessible on <https://dec.alaska.gov/spar/csp/guidance-forms>.

Interstate Technology Regulatory Council, October 2020, *Technical/Regulatory Guidance – Incremental Sampling Methodology (ISM) Update*, accessible on <https://ism-2.itrcweb.org/wp-content/uploads/2020/11/itrc_ism_compiled_508_011921.pdf>.

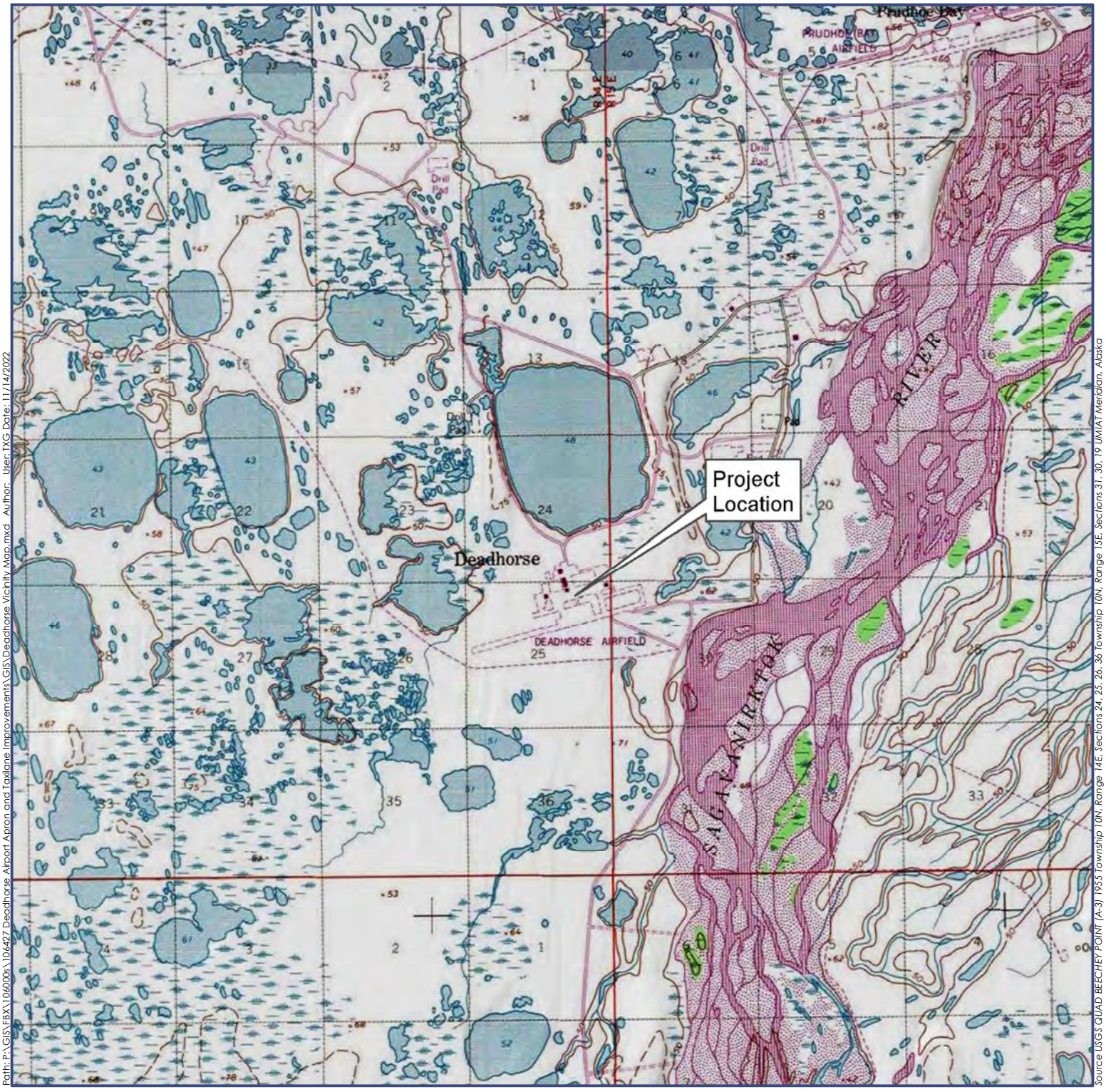
Pewe, Troy Lewis, 1983, Quaternary Geology of Alaska: United States Geological Survey Professional Paper 835.

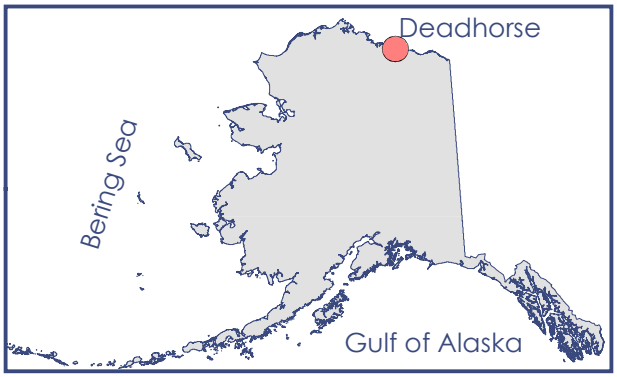
Wahrhaftig, Clyde, 1965, Physiographic divisions of Alaska: U.S. Geological Survey Professional Paper 482.

ATTACHMENT A: SITE FIGURES AND ANALYTICAL SUMMARY

Attachment A

Site Figures and Analytical Summary





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January 2023

VICINITY MAP

Figure 1

Path: P:\GIS\FBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\Deadhorse Vicinity Map.mxd Author: User:TKG Date: 11/14/2022

Source USGS QUAD BEECHEY POINT (A-3) 1955 Township 10N, Range 14E, Sections 24, 25, 26, 36 Township 10N, Range 15E, Sections 31, 30, 19 UMIAT Meridian, Alaska

Path: P:\GIS\FBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\Deadhorse CS and DWP Map.mxd Author: User: TKG Date: 11/14/2022

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Alaska Department of Environmental Conservation, 2022, Contaminated Sites Database and Publications.
Alaska Department of Environmental Conservation, 2022, Drinking Water Protection Areas. Available: https://dec.alaska.gov/applications/eh/services.

N

0 2,000 Feet

Notes:
1. DEC Contaminated Sites File Numbers denoted on map.
DEC = Alaska Department of Environmental Conservation

January 2023

DEC CONTAMINATED SITES AND DRINKING WATER PROTECTION AREAS

Figure 2

Path: P:\GIS\FBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\106427_Deadhorse_Airport\Fig1_Deadhorse_Airport.mxd Author: User: TXG Date: 11/14/2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

N

0 2,000 Feet

Notes:

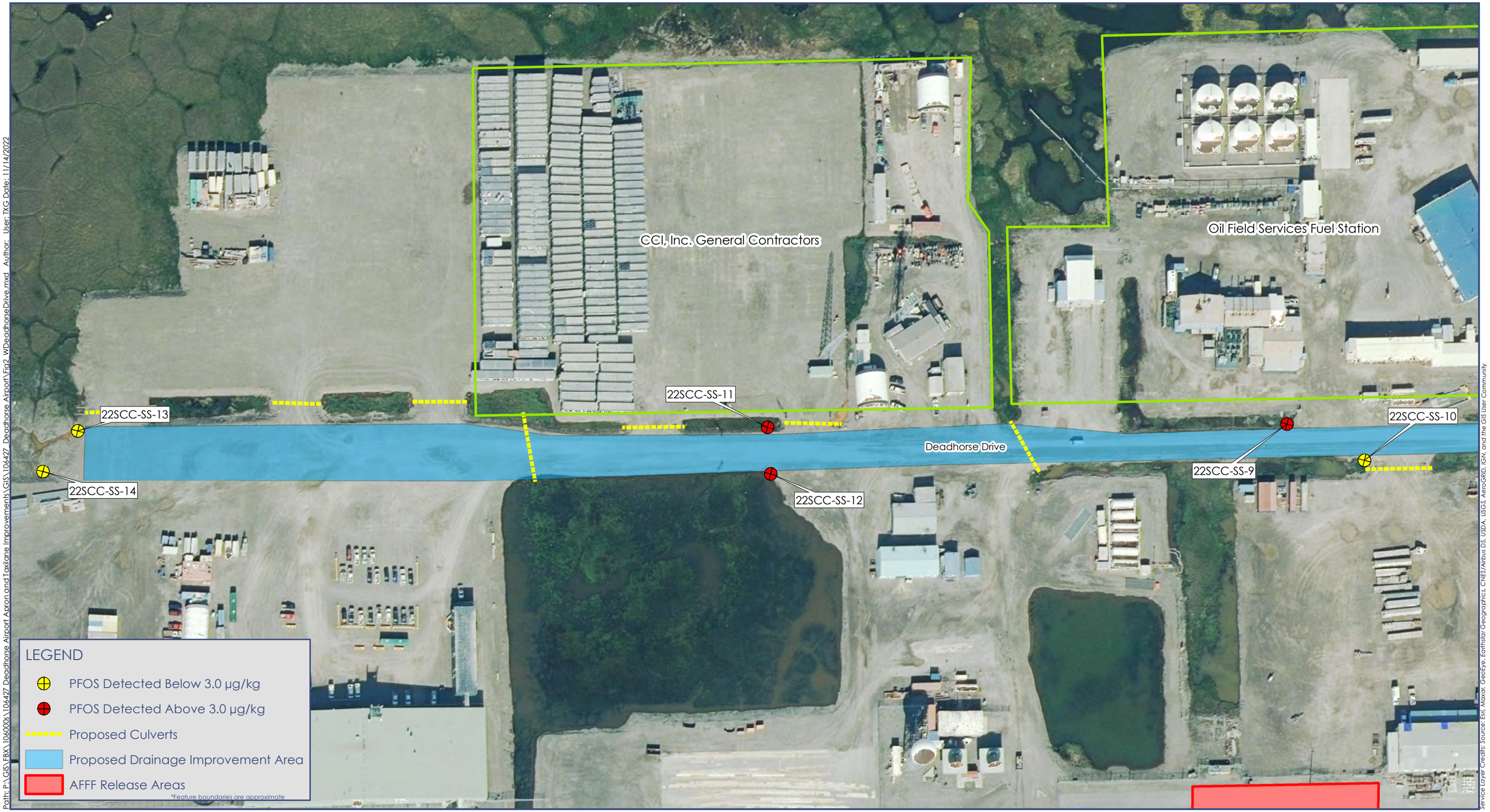
1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS

Figure 3



Path: P:\GIS\VFBX\106000\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\106427_Deadhorse Airport\Fig2_WDeadhorseDrive.mxd Author: User: TXG Date: 11/14/2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
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DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS
WEST DEADHORSE DRIVE

Figure 4

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS
EAST DEADHORSE DRIVE

Figure 5

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS
T/W A East
Figure 6

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS
T/W A West
Figure 7

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	*22SCC-SS-01*	*22SCC-SS-02*	*22SCC-SS-03*	*22SCC-SS-04*	*22SCC-SS-05*	*22SCC-SS-06*	*22SCC-SS-07*	*22SCC-SS-08*	*22SCC-SS-09*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	0.43	<0.20	3.2
	Perfluorohexanoic acid (PFHxA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	0.034 J	0.047 J	<0.22	0.090 J	0.073 J	0.52
	Perfluoroheptanoic acid (PFHpA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.14 J
	Perfluorononanoic acid (PFNA)	NE	NE	µg/Kg	<0.21	<0.21	0.038 J	<0.21	0.14 J	0.078 J	0.071 J	<0.20	0.12 J
	Perfluorobutanesulfonic acid (PFBS)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.13 J
	Perfluorodecanoic acid (PFDA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.071 J
	Perfluoroundecanoic acid (PFUnA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	0.29	0.17 J	<0.20	<0.20	0.22 J
	Perfluorododecanoic acid (PFDoA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Perfluorotridecanoic acid (PFTrDA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	0.17 J	0.098 J	<0.20	<0.20	0.031 J
	Perfluorotetradecanoic acid (PFTeA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Perfluorooctanesulfonic acid (PFOS)	3.0	2,200	µg/Kg	<0.21	<0.21	0.62 JH*	0.52 JH*	0.40 JH*	1.5 JH*	1.2	0.57 JH*	**16**
	Perfluorooctanoic acid (PFOA)	1.7	2,200	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	0.097 J	<0.20	0.45

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

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

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; HH = Human Health; µg/kg = microgram per kilogram; MTGW = Migration to Groundwater; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual.

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	*22SCC-SS-10*	*22SCC-SS-110* DUP	*22SCC-SS-11*	*22SCC-SS-12*	*22SCC-SS-13*	*22SCC-SS-14*	*22SCC-SS-15*	*22SCC-SS-16*	*22SCC-SS-17*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	NE	µg/Kg	0.69 J*	0.28 J*	0.14 J	1.4	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorohexanoic acid (PFHxA)	NE	NE	µg/Kg	0.096 J	<0.21	<0.22	0.37	<0.23	<0.21	0.058 J	<0.23	0.037 J
	Perfluoroheptanoic acid (PFHpA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	0.058 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorononanoic acid (PFNA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	0.060 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorobutanesulfonic acid (PFBS)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	0.044 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorodecanoic acid (PFDA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluoroundecanoic acid (PFUnA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorododecanoic acid (PFDoA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorotridecanoic acid (PFTrDA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorotetradecanoic acid (PFTeA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorooctanesulfonic acid (PFOS)	3.0	2,200	µg/Kg	2.7 J*	1.2 J*	**4.8**	**31**	0.80	0.18 JH*	2.5 JH*	1.1 JH*	0.50 JH*
	Perfluorooctanoic acid (PFOA)	1.7	2,200	µg/Kg	0.063 J	<0.21	<0.22	0.21	<0.23	<0.21	<0.24	<0.23	<0.23

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

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

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; HH = Human Health; µg/kg = microgram per kilogram; MTGW = Migration to Groundwater; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual.

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	*22SCC-SS-18*	*22SCC-SS-19*	*22SCC-SS-20*	*22SCC-SS-120* DUP	*22SCC-SS-21*	*22SCC-SS-22*	*22SCC-SS-23*	*22SCC-SS-24*	*22SCC-SS-25*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorohexanoic acid (PFHxA)	NE	NE	µg/Kg	0.038 J	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	0.041 J	0.037 J
	Perfluoroheptanoic acid (PFHpA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorononanoic acid (PFNA)	NE	NE	µg/Kg	0.025 J	<0.22	0.051 J	0.044 J	<0.21	<0.21	<0.22	<0.21	0.17 J
	Perfluorobutanesulfonic acid (PFBS)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorodecanoic acid (PFDA)	NE	NE	µg/Kg	<0.21	<0.22	0.072 J	0.069 J	<0.21	<0.21	<0.22	<0.21	0.090 J
	Perfluoroundecanoic acid (PFUnA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorododecanoic acid (PFDoA)	NE	NE	µg/Kg	<0.21	<0.22	0.036 J	0.052 J	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorotridecanoic acid (PFTrDA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorotetradecanoic acid (PFTeA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	0.080 J	<0.21	<0.21	<0.22	<0.21	<0.22
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorooctanesulfonic acid (PFOS)	3.0	2,200	µg/Kg	0.26 JH*	0.34 JH*	1.1 JH*	0.88 JH*	1.2	1.4	0.61 JH*	1.8	**18**
	Perfluorooctanoic acid (PFOA)	1.7	2,200	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	0.12 J

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

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

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; HH = Human Health; µg/kg = microgram per kilogram; MTGW = Migration to Groundwater; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual.

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	*22SCC-SS-125* DUP	*22SCC-SS-26*	*22SCC-SS-27*	*22SCC-SS-28*	*22SCC-SS-29*	*22SCC-SS-30*	*22SCC-SS-31*	*22SCC-SS-32*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorohexanoic acid (PFHxA)	NE	NE	µg/Kg	0.051 J	0.040 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluoroheptanoic acid (PFHpA)	NE	NE	µg/Kg	0.050 J	0.046 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorononanoic acid (PFNA)	NE	NE	µg/Kg	0.23	0.038 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorobutanesulfonic acid (PFBS)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorodecanoic acid (PFDA)	NE	NE	µg/Kg	0.11 J	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluoroundecanoic acid (PFUnA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorododecanoic acid (PFDoA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorotridecanoic acid (PFTrDA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorotetradecanoic acid (PFTeA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorooctanesulfonic acid (PFOS)	3.0	2,200	µg/Kg	**21**	1.9	0.62 JH*	**3.7**	0.12 JH*	0.12 JH*	0.44 JH*	0.48
	Perfluorooctanoic acid (PFOA)	1.7	2,200	µg/Kg	0.14 J	0.096 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

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

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; HH = Human Health; µg/kg = microgram per kilogram; MTGW = Migration to Groundwater; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual.

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	22SCC-SS-1	22SCC-SS-2	22SCC-SS-3	22SCC-SS-4	22SCC-SS-5	22SCC-SS-6	22SCC-SS-7	22SCC-SS-8	22SCC-SS-9	22SCC-SS-10
AK101	Gasoline Range Organics	NE	1,400	mg/kg	<4.62 B*	<6.03 B*	<2.82 B*	<2.60 B*	<2.57 B*	<2.60 B*	<2.40 B*	<2.03 B*	<3.08 B*	<2.30 B*
AK102	Diesel Range Organics	NE	12,500	mg/kg	<11.1	<11.1	22.0 J	37.2	20.3 J	23.8	16.3 J	17.3 J	36.1	22.6 J
SW8260D (BTEX)	Benzene	0.022	16	mg/kg	<0.0116	<0.0150	<0.00705	<0.00650	<0.00640	<0.00650	<0.00600	<0.00510	**0.0247**	<0.00575
	Toluene	6.7	200	mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	<0.0154	<0.0115
	Ethylbenzene	0.13	72	mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	0.0111 J	<0.0115
	m,p-xylenes			mg/kg	<0.0462	<0.0605	<0.0283	<0.0260	<0.0256	<0.0261	<0.0240	<0.0203	0.0348 J	<0.0230
	o-Xylene	1.5	57	mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	<0.0154	<0.0115
	Total Xylenes			mg/kg	<0.0695	<0.0905	<0.0423	<0.0389	<0.0385	<0.0391	<0.0360	<0.0305	0.0348 J	<0.0345
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	68	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00862 J	<0.0143
	2-Methylnaphthalene	1.3	420	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.0120 J	<0.0143
	Acenaphthene	37	6,300	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Acenaphthylene	18	3,100	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Anthracene	390	31,000	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Benzo(a)anthracene	0.70	20	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Benzo(a)pyrene	1.9	2.0	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Benzo(b)fluoranthene	20	20	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	0.00809 J
	Benzo(g,h,i)perylene	15,000	3,100	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Benzo(k)fluoranthene	190	200	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Chrysene	600	2,000	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.0107 J	0.00855 J
	Dibenzo(a,h)anthracene	6.3	2.0	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Fluoranthene	590	4,200	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	0.0100 J
	Fluorene	36	4,200	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Indeno(1,2,3-cd)pyrene	65	20	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143
	Naphthalene	0.038	42	mg/kg	<0.0112	<0.0109	<0.0113	**<0.0545**	<0.0111	<0.0117	<0.0109	<0.0111	0.00872 J	<0.0115
	Phenanthrene	39	3,100	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00740 J	0.00931 J
	Pyrene	87	3,100	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00798 J	0.0120 J

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*

NE — Regulatory limit not established for the given analyte.

< — Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

<Bold — The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

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

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; HH = Human Health; MTGW = Migration to Groundwater; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	22SCC-SS-110	22SCC-SS-11	22SCC-SS-12	22SCC-SS-13	22SCC-SS-14	22SCC-SS-15	22SCC-SS-16	22SCC-SS-17	22SCC-SS-18	22SCC-SS-19
AK101	Gasoline Range Organics	NE	1,400	mg/kg	<2.49 B*	<2.52 B*	<2.34 B*	<3.98 B*	<3.29 B*	<3.05 B*	<2.99 B*	<4.85 B*	<1.93 B*	<2.91 B*
AK102	Diesel Range Organics	NE	12,500	mg/kg	20.0 J	<11.2	20.8 J	<11.5	13.2 J	40.9	277	17.1 J	11.7 J	17.3 J
SW8260D (BTEX)	Benzene	0.022	16	mg/kg	<0.00620	<0.00630	<0.00585	<0.00995	<0.00825	<0.00760	<0.00745	<0.0121	<0.00481	<0.00730
	Toluene	6.7	200	mg/kg	<0.0124	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146
	Ethylbenzene	0.13	72	mg/kg	<0.0124	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146
	m,p-xylenes	1.5	57	mg/kg	<0.0249	<0.0253	<0.0234	<0.0398	<0.0330	<0.0305	<0.0299	<0.0485	<0.0193	<0.0291
	o-Xylene			mg/kg	<0.0124	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146
	Total Xylenes			mg/kg	<0.0373	<0.0379	<0.0351	<0.0595	<0.0494	<0.0457	<0.0449	<0.0725	<0.0289	<0.0437
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	68	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	2-Methylnaphthalene	1.3	420	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Acenaphthene	37	6,300	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Acenaphthylene	18	3,100	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Anthracene	390	31,000	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Benzo(a)anthracene	0.70	20	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Benzo(a)pyrene	1.9	2.0	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.00803 J	<0.0138
	Benzo(b)fluoranthene	20	20	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.0112 J	<0.0138
	Benzo(g,h,i)perylene	15,000	3,100	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	0.0537 J	<0.0141	<0.0132	<0.0138
	Benzo(k)fluoranthene	190	200	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Chrysene	600	2,000	mg/kg	<0.0138	<0.0139	0.00855 J	<0.0144	<0.0135	<0.0765	0.209	<0.0141	0.00965 J	<0.0138
	Dibenzo(a,h)anthracene	6.3	2.0	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Fluoranthene	590	4,200	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	0.0236 J	<0.0765	<0.0685	0.00796 J	0.0177 J	<0.0138
	Fluorene	36	4,200	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Indeno(1,2,3-cd)pyrene	65	20	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138
	Naphthalene	0.038	42	mg/kg	<0.0111	<0.0111	<0.0111	<0.0115	<0.0108	**<0.0610**	**<0.0545**	<0.0113	<0.0106	<0.0110
	Phenanthrene	39	3,100	mg/kg	<0.0138	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.0138 J	<0.0138
	Pyrene	87	3,100	mg/kg	<0.0138	<0.0139	0.0237 J	<0.0144	0.0202 J	<0.0765	0.0456 J	<0.0141	0.0153 J	<0.0138

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.

NE Regulatory limit not established for the given analyte.

< Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

<Bold The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

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

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; HH = Human Health; MTGW = Migration to Groundwater; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	MTGW	Arctic Zone HH	Units	*22SCC-SS-20*	*22SCC-SS-120*	*22SCC-SS-21*	*22SCC-SS-22*	*22SCC-SS-23*	*22SCC-SS-24*
AK101	Gasoline Range Organics	NE	1,400	mg/kg	<4.67 B*	<6.27 B*	<2.54 B*	<2.54 B*	<2.94 B*	<2.47 B*
AK102	Diesel Range Organics	NE	12,500	mg/kg	68.6	80.5	13.7 J	84.2	75.8	53.4
SW8260D (BTEX)	Benzene	0.022	16	mg/kg	<0.0117	<0.0157	<0.00635	<0.00635	<0.00735	<0.00620
	Toluene	6.7	200	mg/kg	<0.0233	<0.0314	<0.0127	<0.0127	<0.0147	<0.0124
	Ethylbenzene	0.13	72	mg/kg	<0.0233	<0.0314	<0.0127	<0.0127	<0.0147	<0.0124
	m,p-xylenes			mg/kg	<0.0467	<0.0625	<0.0255	<0.0254	<0.0294	<0.0247
	o-Xylene	1.5	57	mg/kg	<0.0233	<0.0314	<0.0127	<0.0127	<0.0147	<0.0124
	Total Xylenes			mg/kg	<0.0700	<0.0940	<0.0382	<0.0381	<0.0440	<0.0371
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	68	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	2-Methylnaphthalene	1.3	420	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Acenaphthene	37	6,300	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Acenaphthylene	18	3,100	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Anthracene	390	31,000	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(a)anthracene	0.70	20	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(a)pyrene	1.9	2.0	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(b)fluoranthene	20	20	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(g,h,i)perylene	15,000	3,100	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(k)fluoranthene	190	200	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Chrysene	600	2,000	mg/kg	0.0680 J	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Dibenzo(a,h)anthracene	6.3	2.0	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Fluoranthene	590	4,200	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Fluorene	36	4,200	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Indeno(1,2,3-cd)pyrene	65	20	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Naphthalene	0.038	42	mg/kg	**<0.0585**	**<0.0715**	<0.0106	**<0.0520**	**<0.0555**	**<0.0545**
	Phenanthrene	39	3,100	mg/kg	0.0385 J	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680
	Pyrene	87	3,100	mg/kg	<0.0735	<0.0895	<0.0132	<0.0650	<0.0690	<0.0680

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.

NE Regulatory limit not established for the given analyte.

< Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

<Bold The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

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

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; HH = Human Health; MTGW = Migration to Groundwater; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon

ATTACHMENT B: S&W PRELIMINARY PFAS INVESTIGATION REPORT

Attachment B

S&W Preliminary PFAS Investigation Report

SHANNON & WILSON
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

January 4, 2023

Mr. Andrew Niemiec, P.E.
Stantec
2515 A Street
Anchorage, Alaska 99503

RE: FINAL PFAS INVESTIGATION REPORT, DEADHORSE AIRPORT (SCC) FENCE INSTALLATION PROJECT NFAPT00549, AIP 3-02-0339-XXX-20XX, DEADHORSE, ALASKA

Dear Mr. Niemiec,

Shannon & Wilson, Inc has prepared this letter report to document our findings from the initial per- and polyfluoroalkyl substances (PFAS) analytical sampling at the Deadhorse Airport (SCC) in Deadhorse, Alaska (Figure 1). This work was completed in association with Stantec and the Alaska Department of Transportation & Public Facilities (DOT&PF).

PURPOSE AND SCOPE OF SERVICES

The purpose of this investigation was to provide analytical information for PFAS and other potential contaminants in areas that will require soil disturbing activities during the SCC Fence Installation Project NFAPT00549 (AIP 3-02-0339-XXX-20XX). We understand the project includes:

- drainage improvements at SCC, including drainage along Deadhorse Drive;
- relocating utilities impacted by drainage improvements;
- regrading and filling in fields for wildlife control and drainage;
- constructing wildlife fence and fence service roads (including security fence improvements as may be identified); and
- other airport improvements as requested (i.e., filling areas of poor drainage near taxiways).

Based on our understanding of the project, ground disturbing activities are limited to culvert areas and drainage ditches that will be upgraded to improve overall site drainage. The other activities will not disturb existing soils.

Our scope of services, as documented in our March 21, 2022 proposal, included pre-investigation and soil sampling activities, analytical laboratory testing, and reporting. Our

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▪ www.shannonwilson.com ▪

scope was performed in accordance with the Alaska Department of Environmental Conservation (DEC) approved *DOT&PF Deadhorse Airport Preliminary PFAS Investigation Work Plan* (Work Plan), dated May 2022.

CONTAMINANTS OF CONCERN

The primary contaminants of concern for the site are perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), two PFAS commonly found at airports and fire training areas. This investigation and overall improvement project did not include ground disturbances at aqueous film forming foam (AFFF) training areas, although several culvert replacements are adjacent to or along the drainage system associated with AFFF training areas. In addition, there are several known contaminated sites adjacent to the soil disturbing areas or within the drainage system. The primary contaminants of concern for these sites are fuel analytes. Figure 2 displays the approximate location of the contaminated sites in relation to the culverts and drainage areas. Refer to the DEC-approved Work Plan for a list of active DEC Contaminated Sites in the area.

The contaminants of concern for this investigation include:

- gasoline range organics (GRO);
- diesel range organics (DRO);
- benzene, toluene, ethylbenzene, and xylenes (BTEX);
- polynuclear aromatic hydrocarbons (PAHs); and
- PFAS.

FIELD ACTIVITIES

Shannon & Wilson personnel, Mason Craker (DEC qualified sampler) collected 32 near-surface soil samples from inlets and outlets for each of the nine culverts within the secure area and seven culverts along Deadhorse Drive. A total of 32 primary PFAS samples were collected with an additional three field-duplicate samples collected for quality control (QC) purposes. Of the primary samples, 24 sample locations were near contaminated sites or along the drainage from contaminated sites. Theses samples were also analyzed for GRO, DRO, BTEX,

Exhibit 1 – Drainage ditch and culvert within the secured area.

and PAHs. Drainage ditches were partially frozen during field activities, with some sections of standing water. Soils consisted of mostly wet gravel. Samples were collected from the walls of the drainage ditch directly above the water level and just below the vegetated surface, if present. Copies of our field logs are presented in Appendix A.

SAMPLE CUSTODY, STORAGE, AND TRANSPORT

Immediately after collection, Shannon & Wilson placed PFAS sample jars into Ziploc bags and stored the soil samples in a designated sample cooler. The samples for fuel analyses were wrapped in bubble wrap and placed in a separate cooler. The coolers were maintained between 0 °C and 6 °C with frozen gel ice, using packing material as necessary to prevent bottle breakage. Trip blanks were kept with the volatile samples during sampling and packed in the fuel sample cooler during transport. Shannon & Wilson is aware of the potential for cross-contamination of PFAS samples from numerous everyday household items and took appropriate precautions to prevent cross-contamination.

Shannon & Wilson shipped the PFAS sample cooler to Eurofins Environmental Testing America (Eurofins) in West Sacramento, California on June 10, 2022 using Alaska Air Cargo priority service direct from SCC. Samples were kept refrigerated by Alaska Air Cargo until picked up by Eurofins staff. PFAS samples were submitted for determination of the 18 PFAS analytes by the Modified EPA Method 537 compliant with the DoD-QSM Version 5.3 Table B-15.

Shannon & Wilson hand delivered samples for GRO, DRO, BTEX, and PAHs analysis to the SGS North America, Inc. (SGS) Fairbanks receiving office on June 13, 2022. The samples were submitted for determination of fuel analyses by the following methods:

- GRO by the Alaska Method AK101;
- DRO by the Alaska Method AK102;
- BTEX by the Environmental Protection Agency (EPA) Method SW8260D; and
- PAH by the EPA Method SW8270D-SIM.

Shannon & Wilson completed a Chain of Custody (COC) record at the time each cooler was packed. The COC records were placed in plastic bags and taped to the inside of the corresponding cooler. The COC records document sample possession from the point of collection to the time of receipt by the laboratory sample-control center and through analysis by the laboratory. A copy of the COC records was kept to identify sample custody between field and laboratory.

ANALYTICAL RESULTS

The PFAS analytical results were reported by Eurofins in work order number 320-89051-1, dated July 7, 2022 (Appendix B). The fuels analytical results were reported by SGS in work order number 1223040, dated July 12, 2022 (Appendix C). In accordance with the DEC-approved Work Plan, analytical results were compared to the most stringent DEC Cleanup Levels from 18 AAC 75 *Table B1. Method Two – Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone*. Summaries of the PFAS and fuel analytical results are presented in Table 1 and Table 2, respectively. Below is a discussion of the analytical results.

- One or more PFAS analytes were detected in 30 of the 32 primary samples (Table 1). PFOS detections exceeded the DEC Migration to Groundwater Cleanup Level of 3.0 micrograms per kilogram (µg/kg) in samples *22SCC-SS-9*, *22SCC-SS-11*, *22SCC-SS-12*, *22SCC-SS-25*, *22SCC-SS-125*, and *22SCC-SS-28*. These samples had detections for PFOS ranging from to 3.7 µg/kg to 31 µg/kg.
- Several fuel analytes were detected in the 24 primary samples (Table 2). Of the detected results, only benzene was detected above the DEC Migration to Groundwater Cleanup Level of 0.022 milligrams per kilogram (mg/kg) in sample *22SCC-SS-9* at a concentration of 0.0247 mg/kg.
- The remaining detections were below the DEC Cleanup Levels, where such limits exist.

The PFOS results are displayed in Figures 3 – 7.

QUALITY ASSURANCE / QUALITY CONTROL

Quality Assurance/Quality Control (QA/QC) procedures assist in producing data of acceptable quality and reliability. Shannon & Wilson reviewed the analytical results for laboratory QC samples and conducted a QA assessment for this project. The QA assessment included a review of the chain-of -custody records and laboratory-receipt forms to check that custody was not breached, sample holding-times were met, and the samples were properly handled from the point of collection through analysis by the laboratory. The QA review procedures allowed Shannon & Wilson to document the accuracy and precision of the analytical data, as well as check the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards.

Shannon & Wilson reviewed the data using the current DEC Laboratory Data Review Checklist (LDRC; Appendices B and C). During the QC review, Shannon & Wilson applied flags indicating estimated data or analytical bias due to QC failures, as follows.

- Samples *22SCC-SS-4*, *22SCC-SS-15*, *22SCC-SS-16*, *22SCC-SS-20*, *22SCC-SS-120*, *22SCC-SS-22*, *22SCC-SS-23*, and *22SCC-SS-24* were analyzed at a dilution for PAH analysis due to the dark color of the laboratory extract. As a result, the laboratory limit of detection (LOD) for naphthalene exceeded the DEC Soil-Cleanup Level for these samples. The analyte was not detected in the project samples; however, we cannot assess if the analyte is present in the samples at concentrations greater than the DEC Soil-Cleanup Levels, but less than the LOD. These analytes are identified in bold in the analytical summary table.
- GRO were detected at estimated concentrations (less than the laboratory limit of quantitation [LOQ]) in the method blank samples. The project samples had similar detections for GRO at estimated concentrations less than five times the associated method blank sample detections. The project sample results are considered possible laboratory artifacts. The results are considered non-detect at the LOQ and are flagged "B*" in the analytical summary tables due to the potential for laboratory cross contamination. We note, the LOQs are reported below the DEC Soil-Cleanup Levels for this analyte and the results are considered usable for decision making for this project.
- The field duplicate pair *22SCC-SS-10* / *22SCC-SS-110* had precision errors for perfluorohexanesulfonic acid (PFHxS) and PFOS. The sample results are considered estimated, no direction of bias, and are flagged "J*" in the analytical summary tables. However, the higher detected result between the duplicate pair is reported at a concentration below applicable DEC Soil-Cleanup Levels for these analytes and the results are considered usable for decision making for this project.
- The transition mass ratio for PFOS for samples *22SCC-SS-3*, *22SCC-SS-4*, *22SCC-SS-5*, *22SCC-SS-6*, *22SCC-SS-8*, *22SCC-SS-14*, *22SCC-SS-15*, *22SCC-SS-16*, *22SCC-SS-17*, *22SCC-SS-18*, *22SCC-SS-19*, *22SCC-SS-20*, *22SCC-SS-120*, *22SCC-SS-23*, *22SCC-SS-27*, *22SCC-SS-29*, *22SCC-SS-30*, and *22SCC-SS-31* were outside laboratory ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. The sample results are considered estimated, biased high, and are flagged "JH*" in the analytical summary tables. However, the reported results with these failures did not have detections that exceeded the DEC Soil-Cleanup Levels for PFOS, and the results are considered usable for decision making for this project.

Additional QC failures were observed that did not affect the sample results. Refer to the LDRCs for additional details (Appendices B and C).

DISCUSSION AND CLOSURE

PFOS was detected above the DEC Soil-Cleanup Level in six soil samples from the project area. These PFAS exceedances are located as follows:

- Sample *22SCC-SS-9* was collected from the culvert along Deadhorse Drive near the Northern Oilfield Services Fuel Station;
- Samples *22SCC-SS-11* and *22SCC-SS-12* were collected from the culvert along Deadhorse Drive near the CCI, Inc. General Contractors lot;
- Samples *22SCC-SS-25* and the field-duplicate *22SCC-SS-125* were collected from the culvert within the secured area along the western edge of the Terminal Apron; and
- Sample *22SCC-SS-28* was collected from the culvert within the secured area along Taxiway B.

In addition, benzene was detected above the DEC Soil-Cleanup Level in soil sample *22SCC-SS-9* from the culvert along Deadhorse Drive near the Northern Oilfield Service Fuel Station. This detection is consistent with fuel contamination observed in soils at the Contaminated Site NANA Oilfield Services Fuel Station (DEC File Number 300.38.298; Hazard ID 25765).

Proper handling and disposal should be conducted for PFAS and benzene exceedances for soil excavated during construction at the areas identified above the DEC Soil-Cleanup Levels in this investigation. This conclusion should be re-evaluated if regulatory limits change prior to commencement of earth disturbing activities, observations during construction suggest the presence of PFAS or fuel contaminants, or other information becomes available regarding the potential for contaminants to be present.

Shannon & Wilson has prepared the enclosed document "*Important Information about Your Geotechnical/Environmental Report*" to assist you and others in understanding the use and limitations of this report. This data report was prepared for the exclusive use of the Stantec and their representatives in accordance with our scope of services. Regulatory agencies may reach different conclusions than Shannon & Wilson.

Shannon & Wilson's observations represent site conditions as they existed during our June 2022 sampling effort. Our observations are specific to the locations and dates noted herein and may not be applicable to all areas of the site. This analytical testing effort cannot precisely predict the characteristics, quality, or distribution of contamination throughout the site.

Potential variations include, but are not limited to:

- The conditions between sampling points may be different than those observed at the sampling points.
- The passage of time or intervening causes (natural and manmade) may result in changes to site conditions.
- Contaminant concentrations may change in response to other natural processes, chemical reactions, and/or other events.
- The presence, distribution, and concentration of contaminants throughout the project area may vary from those observed at our sampling locations. Our tests may not represent the highest contaminant concentrations at the site.

The report should not be used without our approval 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.
- If the site ownership or land use has changed.
- If the land use or site ownership 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 or our analyses, conclusions, and recommendations.

Sincerely,

SHANNON & WILSON

Michael Jaramillo
Chemist

MXJ:KRF:CBD/czh:mxj

Enc. Table 1 – June 2022 PFAS Analytical Summary
Table 2 – June 2022 Fuels Analytical Summary
Figure 1 – Vicinity Map
Figure 2 – DEC Contaminated Sites and Drinking Water Protection Areas
Figure 3 – Surface Soil PFAS Results
Figure 4 – Surface Soil PFAS Results – West Deadhorse Drive
Figure 5 – Surface Soil PFAS Results – East Deadhorse Drive
Figure 6 – Surface Soil PFAS Results – T/W A East
Figure 7 – Surface Soil PFAS Results – T/W A West
Appendix A – Field Logs
Appendix B – Eurofins Laboratory Report and LDRC
Appendix C – SGS Laboratory Report and LDRC

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	*22SCC-SS-01*	*22SCC-SS-02*	*22SCC-SS-03*	*22SCC-SS-04*	*22SCC-SS-05*	*22SCC-SS-06*	*22SCC-SS-07*	*22SCC-SS-08*	*22SCC-SS-09*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	0.43	<0.20	3.2
	Perfluorohexanoic acid (PFHxA)	NE	µg/Kg	<0.21	<0.21	<0.23	0.034 J	0.047 J	<0.22	0.090 J	0.073 J	0.52
	Perfluoroheptanoic acid (PFHpA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.14 J
	Perfluorononanoic acid (PFNA)	NE	µg/Kg	<0.21	<0.21	0.038 J	<0.21	0.14 J	0.078 J	0.071 J	<0.20	0.12 J
	Perfluorobutanesulfonic acid (PFBS)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.13 J
	Perfluorodecanoic acid (PFDA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	0.071 J
	Perfluoroundecanoic acid (PFUnA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	0.29	0.17 J	<0.20	<0.20	0.22 J
	Perfluorododecanoic acid (PFDoA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Perfluorotridecanoic acid (PFTrDA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	0.17 J	0.098 J	<0.20	<0.20	0.031 J
	Perfluorotetradecanoic acid (PFTeA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	<0.20	<0.20	<0.23
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/Kg	<0.21	<0.21	0.62 JH*	0.52 JH*	0.40 JH*	1.5 JH*	1.2	0.57 JH*	**16**
	Perfluorooctanoic acid (PFOA)	1.7	µg/Kg	<0.21	<0.21	<0.23	<0.21	<0.21	<0.22	0.097 J	<0.20	0.45

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; µg/kg = microgram per kilogram; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	*22SCC-SS-10*	*22SCC-SS-110* DUP	*22SCC-SS-11*	*22SCC-SS-12*	*22SCC-SS-13*	*22SCC-SS-14*	*22SCC-SS-15*	*22SCC-SS-16*	*22SCC-SS-17*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	µg/Kg	0.69 J*	0.28 J*	0.14 J	1.4	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorohexanoic acid (PFHxA)	NE	µg/Kg	0.096 J	<0.21	<0.22	0.37	<0.23	<0.21	0.058 J	<0.23	0.037 J
	Perfluoroheptanoic acid (PFHpA)	NE	µg/Kg	<0.22	<0.21	<0.22	0.058 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorononanoic acid (PFNA)	NE	µg/Kg	<0.22	<0.21	<0.22	0.060 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorobutanesulfonic acid (PFBS)	NE	µg/Kg	<0.22	<0.21	<0.22	0.044 J	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorodecanoic acid (PFDA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluoroundecanoic acid (PFUnA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorododecanoic acid (PFDoA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorotridecanoic acid (PFTrDA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorotetradecanoic acid (PFTeA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	µg/Kg	<0.22	<0.21	<0.22	<0.21	<0.23	<0.21	<0.24	<0.23	<0.23
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/Kg	2.7 J*	1.2 J*	**4.8**	**31**	0.80	0.18 JH*	2.5 JH*	1.1 JH*	0.50 JH*
	Perfluorooctanoic acid (PFOA)	1.7	µg/Kg	0.063 J	<0.21	<0.22	0.21	<0.23	<0.21	<0.24	<0.23	<0.23

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; µg/kg = microgram per kilogram; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	*22SCC-SS-18*	*22SCC-SS-19*	*22SCC-SS-20*	*22SCC-SS-120* DUP	*22SCC-SS-21*	*22SCC-SS-22*	*22SCC-SS-23*	*22SCC-SS-24*	*22SCC-SS-25*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorohexanoic acid (PFHxA)	NE	µg/Kg	0.038 J	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	0.041 J	0.037 J
	Perfluoroheptanoic acid (PFHpA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorononanoic acid (PFNA)	NE	µg/Kg	0.025 J	<0.22	0.051 J	0.044 J	<0.21	<0.21	<0.22	<0.21	0.17 J
	Perfluorobutanesulfonic acid (PFBS)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorodecanoic acid (PFDA)	NE	µg/Kg	<0.21	<0.22	0.072 J	0.069 J	<0.21	<0.21	<0.22	<0.21	0.090 J
	Perfluoroundecanoic acid (PFUnA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorododecanoic acid (PFDoA)	NE	µg/Kg	<0.21	<0.22	0.036 J	0.052 J	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorotridecanoic acid (PFTrDA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorotetradecanoic acid (PFTeA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	µg/Kg	<0.21	<0.22	<0.24	0.080 J	<0.21	<0.21	<0.22	<0.21	<0.22
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	<0.22
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/Kg	0.26 JH*	0.34 JH*	1.1 JH*	0.88 JH*	1.2	1.4	0.61 JH*	1.8	**18**
	Perfluorooctanoic acid (PFOA)	1.7	µg/Kg	<0.21	<0.22	<0.24	<0.25	<0.21	<0.21	<0.22	<0.21	0.12 J

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; µg/kg = microgram per kilogram; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual

Table 1 — June 2022 PFAS Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	*22SCC-SS-125* DUP	*22SCC-SS-26*	*22SCC-SS-27*	*22SCC-SS-28*	*22SCC-SS-29*	*22SCC-SS-30*	*22SCC-SS-31*	*22SCC-SS-32*
EPA 537M (PFAS)	Perfluorohexanesulfonic acid (PFHxS)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorohexanoic acid (PFHxA)	NE	µg/Kg	0.051 J	0.040 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluoroheptanoic acid (PFHpA)	NE	µg/Kg	0.050 J	0.046 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorononanoic acid (PFNA)	NE	µg/Kg	0.23	0.038 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorobutanesulfonic acid (PFBS)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorodecanoic acid (PFDA)	NE	µg/Kg	0.11 J	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluoroundecanoic acid (PFUnA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorododecanoic acid (PFDoA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorotridecanoic acid (PFTrDA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorotetradecanoic acid (PFTeA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NE	µg/Kg	<0.22	<0.22	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/Kg	**21**	1.9	0.62 JH*	**3.7**	0.12 JH*	0.12 JH*	0.44 JH*	0.48
	Perfluorooctanoic acid (PFOA)	1.7	µg/Kg	0.14 J	0.096 J	<0.21	<0.23	<0.22	<0.21	<0.23	<0.21

Notes:

Results reported from Eurofins Environmental Testing America work order 320-89051-1.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 *Table B1. Method Two - Soil Cleanup Levels* .

PFAS analyzed by the Modified EPA 537 Method compliant with the DoD QSM Version 5.3 Table B-15.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10* .

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20* .

Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25* .

NE Regulatory limit not established for the given analyte.

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

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.

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

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

DoD = Department of Defense; DUP = field duplicate; EPA = Environmental Protection Agency; µg/kg = microgram per kilogram; PFAS = per- and polyfluoroalkyl substances; QSM = Quality Systems Manual

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	22SCC-SS-1	22SCC-SS-2	22SCC-SS-3	22SCC-SS-4	22SCC-SS-5	22SCC-SS-6	22SCC-SS-7	22SCC-SS-8	22SCC-SS-9	22SCC-SS-10	22SCC-SS-110
AK101	Gasoline Range Organics †	1,400	mg/kg	<4.62 B*	<6.03 B*	<2.82 B*	<2.60 B*	<2.57 B*	<2.60 B*	<2.40 B*	<2.03 B*	<3.08 B*	<2.30 B*	<2.49 B*
AK102	Diesel Range Organics †	12,500	mg/kg	<11.1	<11.1	22.0 J	37.2	20.3 J	23.8	16.3 J	17.3 J	36.1	22.6 J	20.0 J
SW8260D (BTEX)	Benzene	0.022	mg/kg	<0.0116	<0.0150	<0.00705	<0.00650	<0.00640	<0.00650	<0.00600	<0.00510	**0.0247**	<0.00575	<0.00620
	Toluene	6.7	mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	<0.0154	<0.0115	<0.0124
	Ethylbenzene	0.13	mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	0.0111 J	<0.0115	<0.0124
	m,p-xylenes	1.5	mg/kg	<0.0462	<0.0605	<0.0283	<0.0260	<0.0256	<0.0261	<0.0240	<0.0203	0.0348 J	<0.0230	<0.0249
	o-Xylene		mg/kg	<0.0231	<0.0302	<0.0141	<0.0130	<0.0129	<0.0130	<0.0120	<0.0101	<0.0154	<0.0115	<0.0124
	Total Xylenes		mg/kg	<0.0695	<0.0905	<0.0423	<0.0389	<0.0385	<0.0391	<0.0360	<0.0305	0.0348 J	<0.0345	<0.0373
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00862 J	<0.0143	<0.0138
	2-Methylnaphthalene	1.3	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.0120 J	<0.0143	<0.0138
	Acenaphthene	37	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Acenaphthylene	18	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Anthracene	390	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Benzo(a)anthracene	0.7	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Benzo(a)pyrene‡	1.5	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Benzo(b)fluoranthene‡	15	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	0.00809 J	<0.0138
	Benzo(g,h,i)perylene‡	2,300	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Benzo(k)fluoranthene ‡	150	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Chrysene	600	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.0107 J	0.00855 J	<0.0138
	Dibenzo(a,h)anthracene ‡	1.5	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Fluoranthene	590	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	0.0100 J	<0.0138
	Fluorene	36	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Indeno(1,2,3-cd)pyrene ‡	15	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	<0.0144	<0.0143	<0.0138
	Naphthalene	0.038	mg/kg	<0.0112	<0.0109	<0.0113	**<0.0545**	<0.0111	<0.0117	<0.0109	<0.0111	0.00872 J	<0.0115	<0.0111
	Phenanthrene	39	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00740 J	0.00931 J	<0.0138
	Pyrene	87	mg/kg	<0.0140	<0.0136	<0.0141	<0.0685	<0.0138	<0.0147	<0.0136	<0.0138	0.00798 J	0.0120 J	<0.0138

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels. Migration to groundwater limits reported unless otherwise noted.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.

† Regulatory limits from 18 AAC 75 *Table B2 Method Two Arctic Zone (Ingestion)* Cleanup Level.

‡ Regulatory limits from 18 AAC 75 *Table B1 Method Two - Human Health* Cleanup Level.

< Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

<Bold The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

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

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	22SCC-SS-11	22SCC-SS-12	22SCC-SS-13	22SCC-SS-14	22SCC-SS-15	22SCC-SS-16	22SCC-SS-17	22SCC-SS-18	22SCC-SS-19	22SCC-SS-20	22SCC-SS-120
AK101	Gasoline Range Organics †	1,400	mg/kg	<2.52 B*	<2.34 B*	<3.98 B*	<3.29 B*	<3.05 B*	<2.99 B*	<4.85 B*	<1.93 B*	<2.91 B*	<4.67 B*	<6.27 B*
AK102	Diesel Range Organics †	12,500	mg/kg	<11.2	20.8 J	<11.5	13.2 J	40.9	277	17.1 J	11.7 J	17.3 J	68.6	80.5
SW8260D (BTEX)	Benzene	0.022	mg/kg	<0.00630	<0.00585	<0.00995	<0.00825	<0.00760	<0.00745	<0.0121	<0.00481	<0.00730	<0.0117	<0.0157
	Toluene	6.7	mg/kg	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146	<0.0233	<0.0314
	Ethylbenzene	0.13	mg/kg	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146	<0.0233	<0.0314
	m,p-xylenes	1.5	mg/kg	<0.0253	<0.0234	<0.0398	<0.0330	<0.0305	<0.0299	<0.0485	<0.0193	<0.0291	<0.0467	<0.0625
	o-Xylene		mg/kg	<0.0126	<0.0117	<0.0199	<0.0164	<0.0153	<0.0150	<0.0243	<0.00965	<0.0146	<0.0233	<0.0314
	Total Xylenes		mg/kg	<0.0379	<0.0351	<0.0595	<0.0494	<0.0457	<0.0449	<0.0725	<0.0289	<0.0437	<0.0700	<0.0940
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	2-Methylnaphthalene	1.3	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Acenaphthene	37	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Acenaphthylene	18	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Anthracene	390	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Benzo(a)anthracene	0.7	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Benzo(a)pyrene‡	1.5	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.00803 J	<0.0138	<0.0735	<0.0895
	Benzo(b)fluoranthene‡	15	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.0112 J	<0.0138	<0.0735	<0.0895
	Benzo(g,h,i)perylene‡	2,300	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	0.0537 J	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Benzo(k)fluoranthene ‡	150	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Chrysene	600	mg/kg	<0.0139	0.00855 J	<0.0144	<0.0135	<0.0765	0.209	<0.0141	0.00965 J	<0.0138	0.0680 J	<0.0895
	Dibenzo(a,h)anthracene ‡	1.5	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Fluoranthene	590	mg/kg	<0.0139	<0.0139	<0.0144	0.0236 J	<0.0765	<0.0685	0.00796 J	0.0177 J	<0.0138	<0.0735	<0.0895
	Fluorene	36	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Indeno(1,2,3-cd)pyrene ‡	15	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	<0.0132	<0.0138	<0.0735	<0.0895
	Naphthalene	0.038	mg/kg	<0.0111	<0.0111	<0.0115	<0.0108	**<0.0610**	**<0.0545**	<0.0113	<0.0106	<0.0110	**<0.0585**	**<0.0715**
	Phenanthrene	39	mg/kg	<0.0139	<0.0139	<0.0144	<0.0135	<0.0765	<0.0685	<0.0141	0.0138 J	<0.0138	0.0385 J	<0.0895
	Pyrene	87	mg/kg	<0.0139	0.0237 J	<0.0144	0.0202 J	<0.0765	0.0456 J	<0.0141	0.0153 J	<0.0138	<0.0735	<0.0895

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels. Migration to groundwater limits reported unless otherwise noted.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.

† Regulatory limits from 18 AAC 75 *Table B2 Method Two Arctic Zone (Ingestion)* Cleanup Level.

‡ Regulatory limits from 18 AAC 75 *Table B1 Method Two - Human Health* Cleanup Level.

< Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

<Bold The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

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

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon

Table 2 — June 2022 Fuels Analytical Results Summary

Analytical Method	Analyte	Regulatory Limit	Units	*22SCC-SS-21*	*22SCC-SS-22*	*22SCC-SS-23*	*22SCC-SS-24*
AK101	Gasoline Range Organics †	1,400	mg/kg	<2.54 B*	<2.54 B*	<2.94 B*	<2.47 B*
AK102	Diesel Range Organics †	12,500	mg/kg	13.7 J	84.2	75.8	53.4
SW8260D (BTEX)	Benzene	0.022	mg/kg	<0.00635	<0.00635	<0.00735	<0.00620
	Toluene	6.7	mg/kg	<0.0127	<0.0127	<0.0147	<0.0124
	Ethylbenzene	0.13	mg/kg	<0.0127	<0.0127	<0.0147	<0.0124
	m,p-xylenes	1.5	mg/kg	<0.0255	<0.0254	<0.0294	<0.0247
	o-Xylene		mg/kg	<0.0127	<0.0127	<0.0147	<0.0124
	Total Xylenes		mg/kg	<0.0382	<0.0381	<0.0440	<0.0371
SW8270D-SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	2-Methylnaphthalene	1.3	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Acenaphthene	37	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Acenaphthylene	18	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Anthracene	390	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(a)anthracene	0.7	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(a)pyrene‡	1.5	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(b)fluoranthene‡	15	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(g,h,i)perylene‡	2,300	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Benzo(k)fluoranthene ‡	150	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Chrysene	600	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Dibenzo(a,h)anthracene ‡	1.5	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Fluoranthene	590	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Fluorene	36	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Indeno(1,2,3-cd)pyrene ‡	15	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Naphthalene	0.038	mg/kg	<0.0106	**<0.0520**	**<0.0555**	**<0.0545**
	Phenanthrene	39	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680
	Pyrene	87	mg/kg	<0.0132	<0.0650	<0.0690	<0.0680

Notes:

Results reported from SGS North America, Inc. work order 1223040.

Regulatory limit obtained from the most stringent Cleanup Level from 18 AAC 75 T*able B1. Method Two - Soil Cleanup Levels* and *Table B2. Method Two – Arctic Zone* Cleanup Levels. Migration to groundwater limits reported unless otherwise noted.

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.

Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.

† Regulatory limits from 18 AAC 75 *Table B2 Method Two Arctic Zone (Ingestion)* Cleanup Level.

‡ Regulatory limits from 18 AAC 75 *Table B1 Method Two - Human Health* Cleanup Level.

< Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.

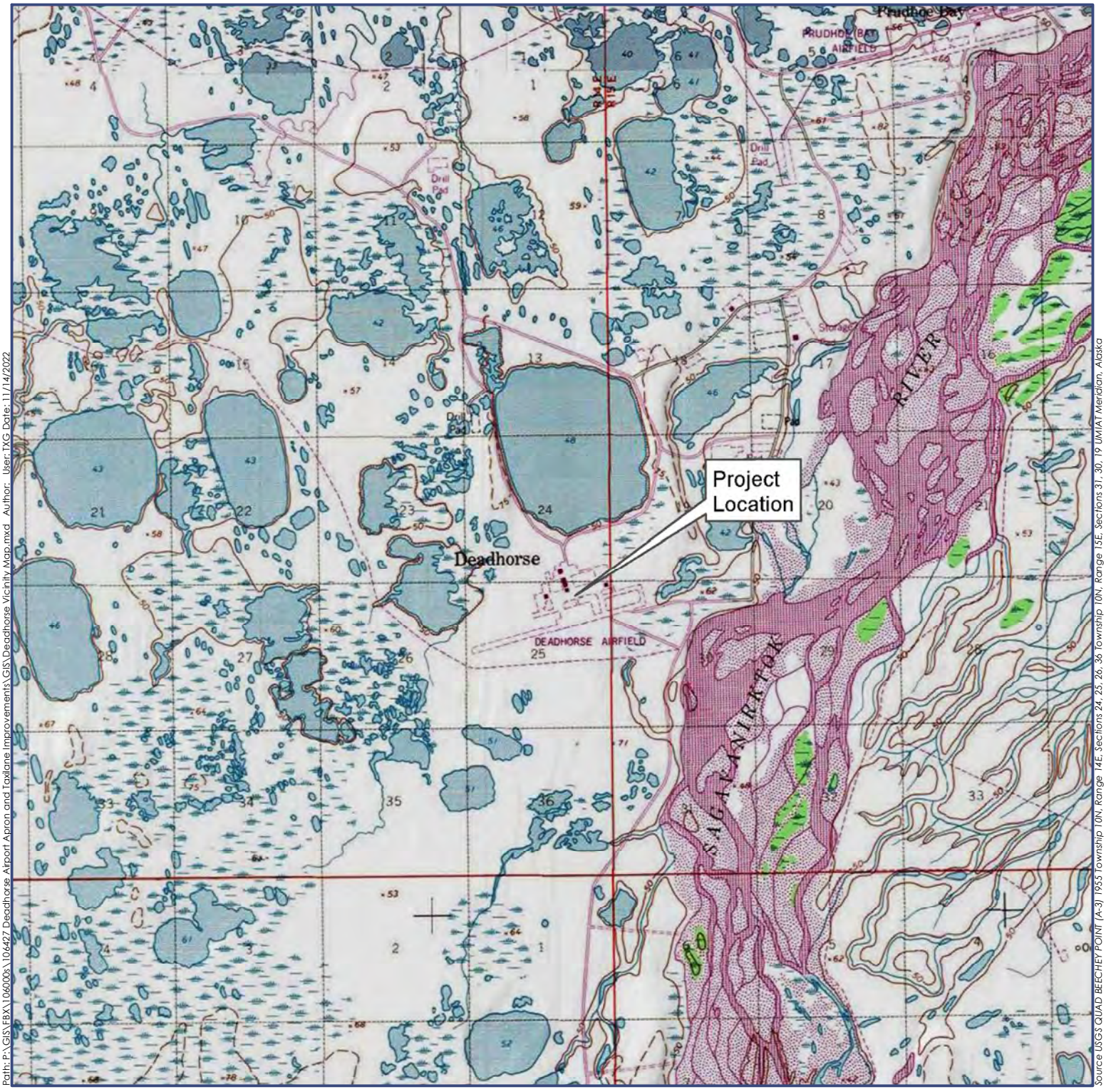
<Bold The laboratory's limit of quantitation (LOQ) exceeds the regulatory limit.

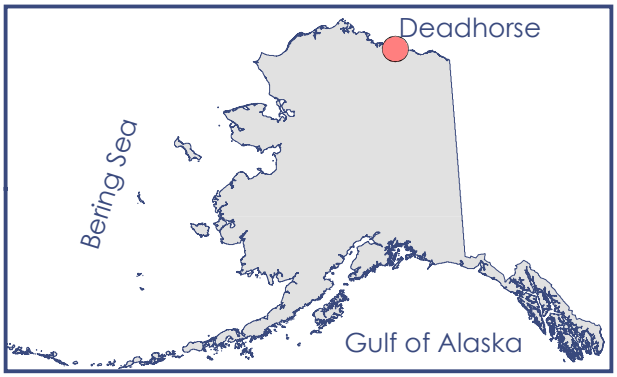
Bold The detected concentration exceeds the regulatory limit for the associated analyte.

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 considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

BTEX = benzene, toluene, ethylbenzene, xylenes; mg/kg = milligram per kilogram; PAH = polynuclear aromatic hydrocarbon





N
0 1
Miles

January 2023

VICINITY MAP

Figure 1

Path: P:\GIS\FBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\Deadhorse Vicinity Map.mxd Author: User:TKG Date: 11/14/2022

Source USGS QUAD BEECHEY POINT (A-3) 1955 Township 10N, Range 14E, Sections 24, 25, 26, 36 Township 10N, Range 15E, Sections 31, 30, 19 UMIAT Meridian, Alaska

Path: P:\GIS\VFBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\Deadhorse CS and DWP Map.mxd Author: User: TKG Date: 11/14/2022

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Alaska Department of Environmental Conservation, 2022, Contaminated Sites Database and Publications.
Alaska Department of Environmental Conservation, 2022, Drinking Water Protection Areas. Available: https://dec.alaska.gov/applications/eh/services.

N

0 2,000 Feet

Notes:
1. DEC Contaminated Sites File Numbers denoted on map.
DEC = Alaska Department of Environmental Conservation

January 2023

DEC CONTAMINATED SITES AND DRINKING WATER PROTECTION AREAS

Figure 2

Path: P:\GIS\FBX\106000s\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\106427_Deadhorse_Airport\Fig1_Deadhorse_Airport.mxd Author: User: TXG Date: 11/14/2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

N

0 2,000 Feet

Notes:

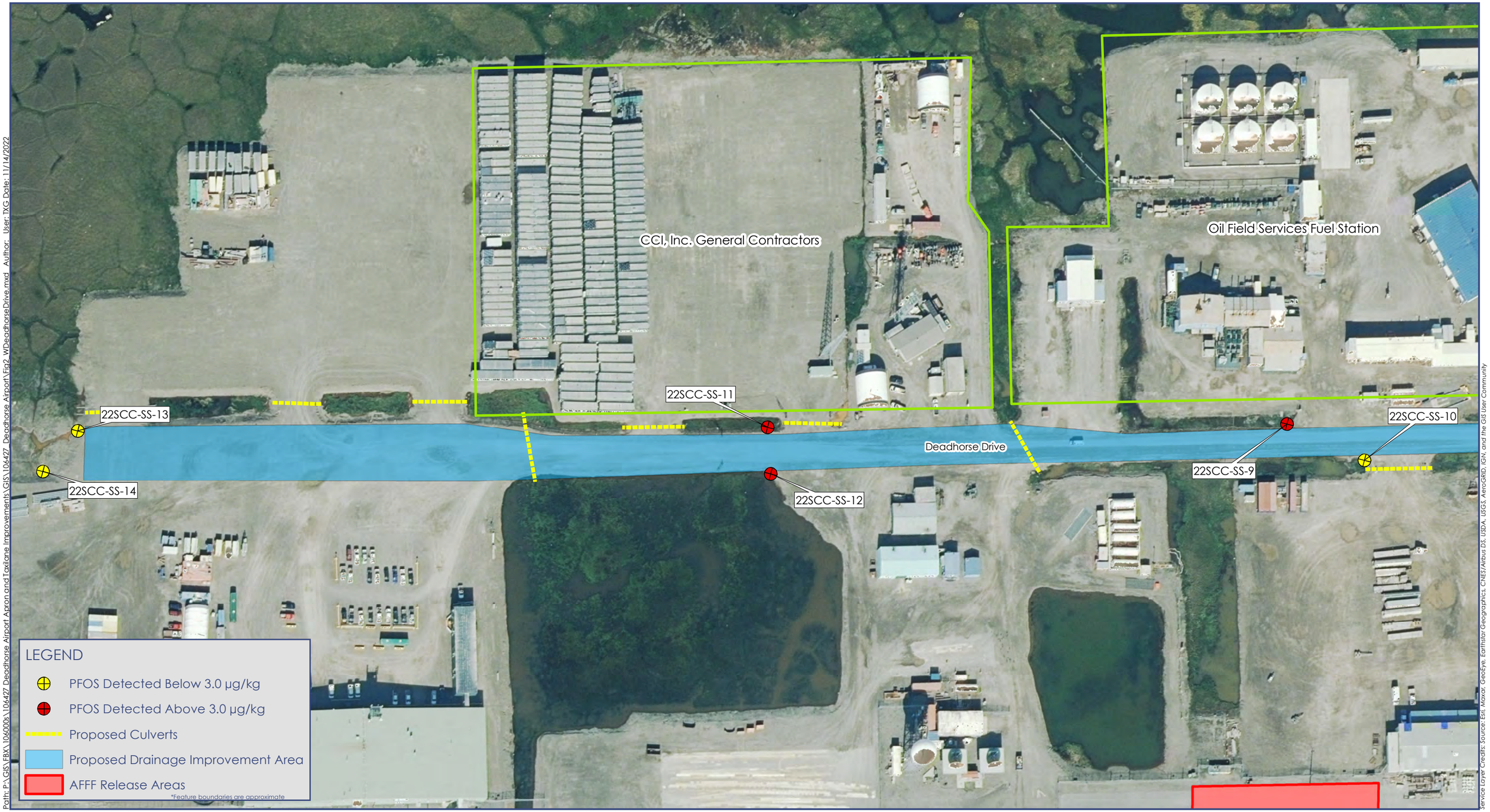
1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS

Figure 3



Path: P:\GIS\FBX\106000\106427 Deadhorse Airport Apron and Taxilane Improvements\GIS\106427_Deadhorse Airport\Fig2_WDeadhorseDrive.mxd Author: User: TXG Date: 11/14/2022

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Notes:

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January 2023

SURFACE SOIL PFAS RESULTS
WEST DEADHORSE DRIVE

Figure 4

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

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January 2023

SURFACE SOIL PFAS RESULTS
EAST DEADHORSE DRIVE

Figure 5

22SCC-SS-23
22SCC-SS-20
22SCC-SS-18
22SCC-SS-17
T/W A
22SCC-SS-24
22SCC-SS-19
22SCC-SS-22
22SCC-SS-21
22SCC-SS-16
22SCC-SS-15
T/W D
T/W A East
24

LEGEND
- PFOS Detected Below 3.0 µg/kg
- Proposed Culverts
- AFFF Release Areas

*Feature boundaries are approximate

N
0
400
Feet

Notes:
1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

DEC = Alaska Department of Environmental Conservation; PFAS = per- and polyfluoroalkyl substances; PFOS = perfluorooctanesulfonic acid; µg/kg = microgram per kilogram

January 2023

SURFACE SOIL PFAS RESULTS
T/W A East
Figure 6

Notes:

1. Results reported from Eurofins Environmental Testing America of West Sacramento work order 320-89051-1.
2. Highest of duplicate pair result displayed. See Table 1 for analytical results.
3. Only PFOS results reported, see Table 1 for analytical results for remaining PFAS.
4. Results compared to DEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1. Method Two - Migration to Groundwater (PFOS ≥ 3.0 µg/kg) to avoid reusing or spreading soils of higher concentration in areas of lower concentration.

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January 2023

SURFACE SOIL PFAS RESULTS
T/W A West
Figure 7

APPENDIX A: FIELD LOGS

Appendix A

Field Logs

SHANNON & WILSON

DAILY FIELD ACTIVITY

PROJECT NO.:	106427-001
REPORT DATE:	6/8/2022
REPORT NO.:	1
SW FIELD REP.:	MSC

Project Name/Location	Deadhorse Airport

Time of Site Visit	from:	1300	to:	1600	Weather and Temperature	Overcast, windy, 28° F
Daily Calibrations	N/A					

Topic and Location

Surface soil sampling at and around the Deadhorse airport.

Description of Field Activity and Observations

0715: Mason Craker (MSC) arrived in Deadhorse, acquired a rental car, and headed to the Brooks Camp to check in and make some phone calls. This included some utility locates (no issues) and setting up a time with DOT staff to collect samples within the secure area the following day.

1300: MSC went to the DOT station to meet with the airport manager and to pick up the coolers that were shipped ahead of time. MSC begins sampling.

1600: MSC completed sampling for the day and left the project area.

In total, 6 surficial soils were collected using sampling spoons.

Exhibit 1 *- Standing water in the drainage ditches (facing west).*

Other Comments

None

SHANNON & WILSON

DAILY FIELD ACTIVITY

PROJECT NO.:	106427-001
REPORT DATE:	6/9/2022
REPORT NO.:	2
SW FIELD REP.:	MSC

Project Name/Location	Deadhorse Airport

Time of Site Visit	from:	0630	to:	1600	Weather and Temperature	Overcast, windy, 36° F
Daily Calibrations	N/A					

Topic and Location

Soil sampling at and around the Deadhorse Airport.

Description of Field Activity and Observations

0630: Mason Craker (MSC) arrives at the DOT office to meet with the DOT escort (Tim) for work conducted within the secured area. Begin collecting samples within the secured area.

1130: Completed collection of all samples within the secured area.

1300: Continue to collect the remaining samples outside the secure area.

In total, 26 surficial soils and 3 field duplicate samples were collected using sampling spoons.

1600: Finish sampling and head back to camp for sample packing.

Exhibit 1 - *Snow and ice in drainage ditches (facing east).*

Other Comments

None

APPENDIX B: EUROFINS LABORATORY REPORT AND LDRC

Appendix B

Eurofins Laboratory Report and LDRC

CONTENTS

Eurofins Environmental Testing America Work Order 320-89051-1

Laboratory Data Review Checklist for Eurofins Work Order 320-89051-1

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 320-89051-1
Client Project/Site: Deadhorse Airport

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

Attn: Michael X Jaramillo

Authorized for release by:
7/7/2022 2:16:11 PM

David Alltucker, Project Manager I
(916)374-4383
David.Alltucker@et.eurofinsus.com

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Method Summary 73
Sample Summary 74
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Definitions/Glossary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

Job ID: 320-89051-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative
320-89051-1

Receipt
The samples were received on 6/14/2022 11:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0º C.

LCMS
Method EPA 537(Mod): The matrix spike (MS) recovery for Perfluorobutanesulfonic acid (PFBS) of preparation batch 320-597225 and analytical batch 320-600108 was outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method EPA 537(Mod): The "I" qualifier means the transition mass ratio for the indicated analyte was below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. 22SCC-SS-5 (320-89051-4), 22SCC-SS-15 (320-89051-5), 22SCC-SS-17 (320-89051-8), 22SCC-SS-19 (320-89051-9), 22SCC-SS-18 (320-89051-10), 22SCC-SS-8 (320-89051-11), 22SCC-SS-3 (320-89051-12), 22SCC-SS-4 (320-89051-14), 22SCC-SS-120 (320-89051-15), 22SCC-SS-6 (320-89051-16), 22SCC-SS-23 (320-89051-17), 22SCC-SS-29 (320-89051-19), 22SCC-SS-20 (320-89051-20), and 22SCC-SS-27 (320-89051-21), 22SCC-SS-14 (320-89051-26), 22SCC-SS-16 (320-89051-32), 22SCC-SS-30 (320-89051-33) and 22SCC-SS-31 (320-89051-35)

Method EPA 537(Mod): Results for samples 22SCC-SS-125 (320-89051-25) and 22SCC-SS-12 (320-89051-28) 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.

General Chemistry
Method Moisture: The sample duplicate (DUP) precision for analytical batch 320-596061 was outside control limits. Sample non-homogeneity and matrix are suspected. Sample was wet muddy sand and medium sized rocks. The relative percent difference (RPD) for solids is within acceptable limits. Data is being reported with this narration. 22SCC-SS-8 (320-89051-11) and (320-89051-A-11 DU)

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

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

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-22 — Lab Sample ID: 320-89051-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.4		0.21	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-2 — Lab Sample ID: 320-89051-2

No Detections.

Client Sample ID: 22SCC-SS-1 — Lab Sample ID: 320-89051-3

No Detections.

Client Sample ID: 22SCC-SS-5 — Lab Sample ID: 320-89051-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.047	J	0.21	0.032	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.14	J	0.21	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.29		0.21	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.17	J	0.21	0.022	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.40	I	0.21	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-15 — Lab Sample ID: 320-89051-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.058	J	0.24	0.038	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5	I	0.24	0.052	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-28 — Lab Sample ID: 320-89051-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	3.7		0.23	0.049	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-26 — Lab Sample ID: 320-89051-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.040	J	0.22	0.035	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.046	J	0.22	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.096	J	0.22	0.059	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.038	J	0.22	0.025	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.9		0.22	0.048	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-17 — Lab Sample ID: 320-89051-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.037	J	0.23	0.036	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.50	I	0.23	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-19 — Lab Sample ID: 320-89051-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.34	I	0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-18 — Lab Sample ID: 320-89051-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.038	J	0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.025	J	0.21	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.26	I	0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-8 — Lab Sample ID: 320-89051-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.073	J	0.20	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.57	I	0.20	0.043	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-3 — Lab Sample ID: 320-89051-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.038	J	0.23	0.025	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.62	I	0.23	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-10 — Lab Sample ID: 320-89051-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.096	J	0.22	0.034	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.063	J	0.22	0.057	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.69		0.22	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-4 — Lab Sample ID: 320-89051-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.034	J	0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.52	I	0.21	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-120 — Lab Sample ID: 320-89051-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.044	J	0.25	0.027	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.069	J	0.25	0.059	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.052	J	0.25	0.037	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.88	I	0.25	0.053	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.080	J	0.25	0.059	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-6 — Lab Sample ID: 320-89051-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.078	J	0.22	0.024	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.17	J	0.22	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.098	J	0.22	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	I	0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-23 — Lab Sample ID: 320-89051-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.61	I	0.22	0.048	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-21 — Lab Sample ID: 320-89051-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.2		0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-29 — Lab Sample ID: 320-89051-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.12	J I	0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-20 — Lab Sample ID: 320-89051-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	0.051	J	0.24	0.026	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.072	J	0.24	0.057	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.036	J	0.24	0.036	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.1	I	0.24	0.051	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-27 — Lab Sample ID: 320-89051-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.62	I	0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-25 — Lab Sample ID: 320-89051-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.037	J	0.22	0.034	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.12	J	0.22	0.058	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.17	J	0.22	0.024	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.090	J	0.22	0.053	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18		0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-24 — Lab Sample ID: 320-89051-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.041	J	0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.8		0.21	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-32 — Lab Sample ID: 320-89051-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.48		0.21	0.046	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-125 — Lab Sample ID: 320-89051-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.051	J	0.22	0.034	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.050	J	0.22	0.042	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.14	J	0.22	0.058	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.23		0.22	0.024	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.11	J	0.22	0.053	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	21		1.1	0.24	ug/Kg	5	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-14 — Lab Sample ID: 320-89051-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.18	J I	0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-13 — Lab Sample ID: 320-89051-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.80		0.23	0.049	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-12 — Lab Sample ID: 320-89051-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.37		0.21	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample ID: 22SCC-SS-12 (Continued) — Lab Sample ID: 320-89051-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.058	J	0.21	0.040	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.056	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.060	J	0.21	0.023	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.044	J	0.21	0.040	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4		0.21	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	31		1.1	0.23	ug/Kg	5	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-11 — Lab Sample ID: 320-89051-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.14	J	0.22	0.031	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.8		0.22	0.047	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-110 — Lab Sample ID: 320-89051-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.28		0.21	0.030	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2		0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-9 — Lab Sample ID: 320-89051-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.52		0.23	0.036	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.14	J	0.23	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.45		0.23	0.061	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.12	J	0.23	0.025	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorodecanoic acid (PFDA)	0.071	J	0.23	0.055	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.22	J	0.23	0.048	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.031	J	0.23	0.024	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.13	J	0.23	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		0.23	0.033	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16		0.23	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-16 — Lab Sample ID: 320-89051-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	1.1	I	0.23	0.050	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-30 — Lab Sample ID: 320-89051-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.12	J I	0.21	0.045	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

Client Sample ID: 22SCC-SS-7 — Lab Sample ID: 320-89051-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.090	J	0.20	0.032	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanoic acid (PFOA)	0.097	J	0.20	0.054	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorononanoic acid (PFNA)	0.071	J	0.20	0.022	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.43		0.20	0.030	ug/Kg	1	☼	EPA 537(Mod)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2		0.20	0.044	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-31

Lab Sample ID: 320-89051-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.44	I	0.23	0.048	ug/Kg	1	☼	EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-22
Date Collected: 06/09/22 08:15
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-1
Matrix: Solid
Percent Solids: 94.0

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		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.054	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorobutanesulfonic acid (PFBS)	ND	F1	0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Perfluorooctanesulfonic acid (PFOS)	**1.4**		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 10:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C4 PFHpA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C4 PFOA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C5 PFNA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C2 PFDA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C2 PFUnA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C2 PFTeDA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C3 PFBS	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
18O2 PFHxS	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C4 PFOS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
d5-NEtFOSAA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*
13C3 HFPO-DA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:26*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**6.0**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**94.0**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-2
Date Collected: 06/08/22 13:50
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-2
Matrix: Solid
Percent Solids: 87.4

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		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 10:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C4 PFOA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C5 PFNA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C2 PFDA	*88*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C2 PFUnA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C2 PFDoA	*88*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
18O2 PFHxS	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
d3-NMeFOSAA	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
d5-NEtFOSAA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*
13C3 HFPO-DA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:57*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.6**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**87.4**		0.1	0.1	%			06/16/22 14:26	1

Client Sample ID: 22SCC-SS-1

Date Collected: 06/08/22 13:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-3

Matrix: Solid
Percent Solids: 88.8

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		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.21	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 11:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C4 PFOA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C2 PFUnA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C2 PFDoA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C2 PFTeDA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C3 PFBS	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C4 PFOS	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
d5-NEtFOSAA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*
13C3 HFPO-DA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:07*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.2**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**88.8**		0.1	0.1	%			06/16/22 14:26	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-5
Date Collected: 06/08/22 14:50
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-4
Matrix: Solid
Percent Solids: 90.1

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)	**0.047**	**J**	0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorononanoic acid (PFNA)	**0.14**	**J**	0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluoroundecanoic acid (PFUnA)	**0.29**		0.21	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorotridecanoic acid (PFTriA)	**0.17**	**J**	0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Perfluorooctanesulfonic acid (PFOS)	**0.40**	**I**	0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 11:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C4 PFOA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C5 PFNA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C2 PFUnA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C2 PFDoA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C2 PFTeDA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C3 PFBS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
d5-NEtFOSAA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*
13C3 HFPO-DA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:17*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**9.9**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**90.1**		0.1	0.1	%			06/16/22 14:26	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-15
Date Collected: 06/09/22 06:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-5
Matrix: Solid
Percent Solids: 81.4

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)	**0.058**	**J**	0.24	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.064	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorononanoic acid (PFNA)	ND		0.24	0.027	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorodecanoic acid (PFDA)	ND		0.24	0.058	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorododecanoic acid (PFDoA)	ND		0.24	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Perfluorooctanesulfonic acid (PFOS)	**2.5**	**I**	0.24	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.058	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 11:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C4 PFHpA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C5 PFNA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C2 PFDA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C2 PFTeDA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
18O2 PFHxS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C4 PFOS	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
d5-NEtFOSAA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*
13C3 HFPO-DA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:27*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.6**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**81.4**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-28
Date Collected: 06/09/22 10:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-6
Matrix: Solid
Percent Solids: 85.2

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		0.23	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.055	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Perfluorooctanesulfonic acid (PFOS)	**3.7**		0.23	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 11:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C4 PFOA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C5 PFNA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C2 PFDA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C2 PFUnA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C2 PFDoA	*88*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C2 PFTeDA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
18O2 PFHxS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
d3-NMeFOSAA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
d5-NEtFOSAA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*
13C3 HFPO-DA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 11:37*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.8**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**85.2**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-26

Date Collected: 06/09/22 10:25
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-7

Matrix: Solid
Percent Solids: 84.5

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)	**0.040**	**J**	0.22	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluoroheptanoic acid (PFHpA)	**0.046**	**J**	0.22	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorooctanoic acid (PFOA)	**0.096**	**J**	0.22	0.059	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorononanoic acid (PFNA)	**0.038**	**J**	0.22	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.054	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Perfluorooctanesulfonic acid (PFOS)	**1.9**		0.22	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.054	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C2 PFUnA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C2 PFDoA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C2 PFTeDA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
18O2 PFHxS	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C4 PFOS	*87*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
d3-NMeFOSAA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
d5-NEtFOSAA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*
13C3 HFPO-DA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:08*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**15.5**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**84.5**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-17
Date Collected: 06/09/22 07:30
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-8
Matrix: Solid
Percent Solids: 85.2

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)	**0.037**	**J**	0.23	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.062	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Perfluorooctanesulfonic acid (PFOS)	**0.50**	**I**	0.23	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 12:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C4 PFHpA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C4 PFOA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C5 PFNA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C2 PFDoA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C4 PFOS	*88*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
d3-NMeFOSAA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
d5-NEtFOSAA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*
13C3 HFPO-DA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:18*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.8**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**85.2**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-19
Date Collected: 06/09/22 08:35
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-9
Matrix: Solid
Percent Solids: 89.6

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	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Perfluorooctanesulfonic acid (PFOS)	**0.34**	**I**	0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 12:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C4 PFHpA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C5 PFNA	*107*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C2 PFDA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C2 PFUnA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C2 PFDoA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C2 PFTeDA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C3 PFBS	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C4 PFOS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
d3-NMeFOSAA	*108*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
d5-NEtFOSAA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*
13C3 HFPO-DA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:28*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.4**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**89.6**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-18
Date Collected: 06/09/22 07:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-10
Matrix: Solid
Percent Solids: 90.2

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)	**0.038**	**J**	0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorononanoic acid (PFNA)	**0.025**	**J**	0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Perfluorooctanesulfonic acid (PFOS)	**0.26**	**I**	0.21	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C4 PFHpA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C5 PFNA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C2 PFUnA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C2 PFTeDA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C3 PFBS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
18O2 PFHxS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C4 PFOS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
d5-NEtFOSAA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*
13C3 HFPO-DA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:38*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**9.8**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**90.2**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-8
Date Collected: 06/09/22 14:10
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-11
Matrix: Solid
Percent Solids: 90.6

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)	**0.073**	**J**	0.20	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Perfluorooctanesulfonic acid (PFOS)	**0.57**	**I**	0.20	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 12:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C4 PFOA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C5 PFNA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C2 PFUnA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C2 PFDoA	*85*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C2 PFTeDA	*86*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
18O2 PFHxS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C4 PFOS	*87*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
d3-NMeFOSAA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
d5-NEtFOSAA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*
13C3 HFPO-DA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:48*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**9.4**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**90.6**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-3
Date Collected: 06/08/22 14:15
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-12
Matrix: Solid
Percent Solids: 83.7

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		0.23	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorononanoic acid (PFNA)	**0.038**	**J**	0.23	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Perfluorooctanesulfonic acid (PFOS)	**0.62**	**I**	0.23	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 12:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*86*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C2 PFDA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C2 PFUnA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C2 PFDoA	*85*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C2 PFTeDA	*84*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
18O2 PFHxS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
d3-NMeFOSAA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
d5-NEtFOSAA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*
13C3 HFPO-DA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 12:58*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.3**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**83.7**		0.1	0.1	%			06/16/22 14:26	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-10
Date Collected: 06/09/22 14:50
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-13
Matrix: Solid
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)	**0.096**	**J**	0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorooctanoic acid (PFOA)	**0.063**	**J**	0.22	0.057	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorohexanesulfonic acid (PFHxS)	**0.69**		0.22	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Perfluorooctanesulfonic acid (PFOS)	**2.7**		0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 13:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C4 PFHpA	*106*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C4 PFOA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C2 PFDA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C2 PFUnA	*111*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C2 PFDoA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C2 PFTeDA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
18O2 PFHxS	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
d5-NEtFOSAA	*114*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*
13C3 HFPO-DA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:08*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**13.6**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**86.4**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-4
Date Collected: 06/08/22 14:25
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-14
Matrix: Solid
Percent Solids: 89.2

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)	**0.034**	**J**	0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Perfluorooctanesulfonic acid (PFOS)	**0.52**	**I**	0.21	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 13:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C4 PFOA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C5 PFNA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C2 PFDA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C2 PFDoA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C2 PFTeDA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C3 PFBS	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
18O2 PFHxS	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
d5-NEtFOSAA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*
13C3 HFPO-DA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:18*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.8**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**89.2**		0.1	0.1	%			06/16/22 14:26	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-120
Date Collected: 06/09/22 08:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-15
Matrix: Solid
Percent Solids: 79.5

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		0.25	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.25	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorooctanoic acid (PFOA)	ND		0.25	0.066	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorononanoic acid (PFNA)	**0.044**	**J**	0.25	0.027	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorodecanoic acid (PFDA)	**0.069**	**J**	0.25	0.059	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.25	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorododecanoic acid (PFDoA)	**0.052**	**J**	0.25	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.25	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.25	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.25	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.25	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Perfluorooctanesulfonic acid (PFOS)	**0.88**	**I**	0.25	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.25	0.028	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**0.080**	**J**	0.25	0.059	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.25	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.25	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.25	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.25	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 13:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C4 PFHpA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C5 PFNA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C2 PFDA	*90*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C2 PFUnA	*106*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C2 PFTeDA	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
d5-NEtFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*
13C3 HFPO-DA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:29*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20.5**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**79.5**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-6
Date Collected: 06/08/22 15:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-16
Matrix: Solid
Percent Solids: 82.3

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	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorononanoic acid (PFNA)	**0.078**	**J**	0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluoroundecanoic acid (PFUnA)	**0.17**	**J**	0.22	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorotridecanoic acid (PFTriA)	**0.098**	**J**	0.22	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Perfluorooctanesulfonic acid (PFOS)	**1.5**	**I**	0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 13:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C5 PFNA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C2 PFUnA	*105*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C2 PFDoA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C2 PFTeDA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C3 PFBS	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C4 PFOS	*88*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
d3-NMeFOSAA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
d5-NEtFOSAA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*
13C3 HFPO-DA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 13:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.7**		0.1	0.1	%			06/16/22 14:26	1
Percent Solids	**82.3**		0.1	0.1	%			06/16/22 14:26	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-23

Date Collected: 06/09/22 09:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-17

Matrix: Solid
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		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.059	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Perfluorooctanesulfonic acid (PFOS)	**0.61**	**I**	0.22	0.048	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 14:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C4 PFHpA	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C2 PFUnA	*108*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C2 PFDoA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C2 PFTeDA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C3 PFBS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
d5-NEtFOSAA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*
13C3 HFPO-DA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:09*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.7**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**89.3**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-21
Date Collected: 06/09/22 08:05
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-18
Matrix: Solid
Percent Solids: 94.7

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		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**		0.21	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 14:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C4 PFHpA	*106*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C4 PFOA	*106*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C5 PFNA	*106*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C2 PFDA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C2 PFUnA	*113*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C2 PFDoA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C2 PFTeDA	*103*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C3 PFBS	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
18O2 PFHxS	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C4 PFOS	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
d3-NMeFOSAA	*105*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
d5-NEtFOSAA	*113*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*
13C3 HFPO-DA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:19*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**5.3**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**94.7**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-29
Date Collected: 06/09/22 10:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-19
Matrix: Solid
Percent Solids: 88.6

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	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.058	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Perfluorooctanesulfonic acid (PFOS)	**0.12**	**J I**	0.22	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 14:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C4 PFOA	*101*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C5 PFNA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C2 PFUnA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C2 PFDoA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C2 PFTeDA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C3 PFBS	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
18O2 PFHxS	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C4 PFOS	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
d5-NEtFOSAA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*
13C3 HFPO-DA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:29*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.4**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**88.6**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-20
Date Collected: 06/09/22 08:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-20
Matrix: Solid
Percent Solids: 80.4

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		0.24	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluoroheptanoic acid (PFHpA)	ND		0.24	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorooctanoic acid (PFOA)	ND		0.24	0.063	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorononanoic acid (PFNA)	**0.051**	**J**	0.24	0.026	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorodecanoic acid (PFDA)	**0.072**	**J**	0.24	0.057	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluoroundecanoic acid (PFUnA)	ND		0.24	0.050	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorododecanoic acid (PFDoA)	**0.036**	**J**	0.24	0.036	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorotridecanoic acid (PFTriA)	ND		0.24	0.025	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.24	0.044	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.24	0.045	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.24	0.035	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Perfluorooctanesulfonic acid (PFOS)	**1.1**	**I**	0.24	0.051	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.24	0.028	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.24	0.057	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.24	0.042	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.24	0.049	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.24	0.037	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.24	0.047	ug/Kg	☼	06/21/22 04:29	07/01/22 14:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C4 PFHpA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C5 PFNA	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C2 PFDA	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C2 PFTeDA	*81*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C3 PFBS	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
18O2 PFHxS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C4 PFOS	*82*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
d3-NMeFOSAA	*84*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
d5-NEtFOSAA	*87*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*
13C3 HFPO-DA	*89*		*50 - 150*	*06/21/22 04:29*	*07/01/22 14:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**19.6**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**80.4**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-27
Date Collected: 06/09/22 10:30
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-21
Matrix: Solid
Percent Solids: 92.7

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		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Perfluorooctanesulfonic acid (PFOS)	**0.62**	**I**	0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 10:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C4 PFHpA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C5 PFNA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C2 PFDA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C2 PFTeDA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C3 PFBS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
18O2 PFHxS	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C4 PFOS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
d3-NMeFOSAA	*104*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
d5-NEtFOSAA	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*
13C3 HFPO-DA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**7.3**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**92.7**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-25
Date Collected: 06/09/22 10:15
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-22
Matrix: Solid
Percent Solids: 89.9

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)	**0.037**	**J**	0.22	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorooctanoic acid (PFOA)	**0.12**	**J**	0.22	0.058	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorononanoic acid (PFNA)	**0.17**	**J**	0.22	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorodecanoic acid (PFDA)	**0.090**	**J**	0.22	0.053	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Perfluorooctanesulfonic acid (PFOS)	**18**		0.22	0.047	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 11:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C2 PFDA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C2 PFUnA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C2 PFDoA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C2 PFTeDA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C4 PFOS	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
d5-NEtFOSAA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:04*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.1**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**89.9**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-24
Date Collected: 06/09/22 09:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-23
Matrix: Solid
Percent Solids: 89.1

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)	**0.041**	**J**	0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Perfluorooctanesulfonic acid (PFOS)	**1.8**		0.21	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C2 PFDoA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C3 PFBS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C4 PFOS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
d5-NEtFOSAA	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:14*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.9**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**89.1**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-32
Date Collected: 06/09/22 11:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-24
Matrix: Solid
Percent Solids: 89.9

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	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.057	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Perfluorooctanesulfonic acid (PFOS)	**0.48**		0.21	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C4 PFHpA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C4 PFOA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C5 PFNA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C2 PFUnA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C2 PFTeDA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C3 PFBS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
18O2 PFHxS	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C4 PFOS	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
d3-NMeFOSAA	*104*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
d5-NEtFOSAA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*
13C3 HFPO-DA	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.1**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**89.9**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-125

Date Collected: 06/09/22 10:05
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-25

Matrix: Solid
Percent Solids: 88.9

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)	**0.051**	**J**	0.22	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluoroheptanoic acid (PFHpA)	**0.050**	**J**	0.22	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorooctanoic acid (PFOA)	**0.14**	**J**	0.22	0.058	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorononanoic acid (PFNA)	**0.23**		0.22	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorodecanoic acid (PFDA)	**0.11**	**J**	0.22	0.053	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.22	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.053	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 11:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C4 PFHpA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C5 PFNA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C2 PFDA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C2 PFUnA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C2 PFDoA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C2 PFTeDA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C3 PFBS	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
18O2 PFHxS	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C4 PFOS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
d5-NEtFOSAA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:34*	*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)	**21**		1.1	0.24	ug/Kg	☼	06/22/22 04:57	07/05/22 17:48	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*89*		*50 - 150*	*06/22/22 04:57*	*07/05/22 17:48*	*5*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.1**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**88.9**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-14
Date Collected: 06/09/22 16:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-26
Matrix: Solid
Percent Solids: 91.7

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		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Perfluorooctanesulfonic acid (PFOS)	**0.18**	**J I**	0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 11:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C4 PFHpA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C4 PFOA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C5 PFNA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C2 PFDA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C2 PFUnA	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C2 PFTeDA	*82*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C3 PFBS	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
18O2 PFHxS	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C4 PFOS	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
d3-NMeFOSAA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
d5-NEtFOSAA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*
13C3 HFPO-DA	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 11:45*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**8.3**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**91.7**		0.1	0.1	%			06/16/22 16:52	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-13
Date Collected: 06/09/22 15:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-27
Matrix: Solid
Percent Solids: 87.8

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		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.047	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Perfluorooctanesulfonic acid (PFOS)	**0.80**		0.23	0.049	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C4 PFHpA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C4 PFOA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C5 PFNA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C3 PFBS	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
18O2 PFHxS	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
d3-NMeFOSAA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
d5-NEtFOSAA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.2**		0.1	0.1	%			06/16/22 16:52	1
Percent Solids	**87.8**		0.1	0.1	%			06/16/22 16:52	1

Client Sample ID: 22SCC-SS-12
Date Collected: 06/09/22 15:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-28
Matrix: Solid
Percent Solids: 88.8

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)	**0.37**		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluoroheptanoic acid (PFHpA)	**0.058**	**J**	0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorooctanoic acid (PFOA)	**0.21**		0.21	0.056	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorononanoic acid (PFNA)	**0.060**	**J**	0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.051	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorobutanesulfonic acid (PFBS)	**0.044**	**J**	0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.051	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 12:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C4 PFHpA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C5 PFNA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C2 PFDA	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C2 PFUnA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C2 PFDoA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C2 PFTeDA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
d5-NEtFOSAA	*103*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:25*	*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)	**31**		1.1	0.23	ug/Kg	☼	06/22/22 04:57	07/05/22 17:58	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*90*		*50 - 150*	*06/22/22 04:57*	*07/05/22 17:58*	*5*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.2**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**88.8**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-11
Date Collected: 06/09/22 15:30
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-29
Matrix: Solid
Percent Solids: 89.4

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	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluoroheptanoic acid (PFHpA)	ND		0.22	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorooctanoic acid (PFOA)	ND		0.22	0.057	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorononanoic acid (PFNA)	ND		0.22	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorodecanoic acid (PFDA)	ND		0.22	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluoroundecanoic acid (PFUnA)	ND		0.22	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorododecanoic acid (PFDoA)	ND		0.22	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorotridecanoic acid (PFTriA)	ND		0.22	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.22	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.22	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorohexanesulfonic acid (PFHxS)	**0.14**	**J**	0.22	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Perfluorooctanesulfonic acid (PFOS)	**4.8**		0.22	0.047	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.22	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.22	0.052	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.22	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.22	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.22	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.22	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 12:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C4 PFHpA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C2 PFUnA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C2 PFDoA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C3 PFBS	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
d3-NMeFOSAA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
d5-NEtFOSAA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*
13C3 HFPO-DA	*83*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.6**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**89.4**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-110

Date Collected: 06/09/22 14:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-30

Matrix: Solid
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	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.056	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorohexanesulfonic acid (PFHxS)	**0.28**		0.21	0.030	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**		0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 12:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C4 PFHpA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C4 PFOA	*104*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C5 PFNA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C2 PFDA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C2 PFUnA	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C2 PFDoA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C2 PFTeDA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C3 PFBS	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
18O2 PFHxS	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
d3-NMeFOSAA	*107*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
d5-NEtFOSAA	*105*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*
13C3 HFPO-DA	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:45*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.5**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**87.5**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-9
Date Collected: 06/09/22 14:35
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-31
Matrix: Solid
Percent Solids: 80.1

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)	0.52		0.23	0.036	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluoroheptanoic acid (PFHpA)	0.14	J	0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorooctanoic acid (PFOA)	0.45		0.23	0.061	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorononanoic acid (PFNA)	0.12	J	0.23	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorodecanoic acid (PFDA)	0.071	J	0.23	0.055	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluoroundecanoic acid (PFUnA)	0.22	J	0.23	0.048	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorotridecanoic acid (PFTriA)	0.031	J	0.23	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorobutanesulfonic acid (PFBS)	0.13	J	0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorohexanesulfonic acid (PFHxS)	3.2		0.23	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Perfluorooctanesulfonic acid (PFOS)	16		0.23	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.055	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.047	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 12:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C4 PFOA	*100*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C2 PFDA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C2 PFUnA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C2 PFDoA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C2 PFTeDA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C3 PFBS	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
18O2 PFHxS	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C4 PFOS	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
d3-NMeFOSAA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
d5-NEtFOSAA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*
13C3 HFPO-DA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 12:55*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.9		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	80.1		0.1	0.1	%			06/17/22 13:57	1

Client Sample ID: 22SCC-SS-16
Date Collected: 06/09/22 06:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-32
Matrix: Solid
Percent Solids: 82.9

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		0.23	0.036	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.061	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.026	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.056	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.049	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Perfluorooctanesulfonic acid (PFOS)	**1.1**	**I**	0.23	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.027	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.056	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.048	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.036	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 13:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C4 PFHpA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C4 PFOA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C5 PFNA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C2 PFDA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C2 PFUnA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C2 PFTeDA	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C3 PFBS	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
18O2 PFHxS	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C4 PFOS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
d3-NMeFOSAA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
d5-NEtFOSAA	*103*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*
13C3 HFPO-DA	*83*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.1**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**82.9**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-30
Date Collected: 06/09/22 10:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-33
Matrix: Solid
Percent Solids: 87.4

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		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluoroheptanoic acid (PFHpA)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorooctanoic acid (PFOA)	ND		0.21	0.055	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorononanoic acid (PFNA)	ND		0.21	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorodecanoic acid (PFDA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluoroundecanoic acid (PFUnA)	ND		0.21	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorododecanoic acid (PFDoA)	ND		0.21	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorotridecanoic acid (PFTriA)	ND		0.21	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.21	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.21	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.21	0.030	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Perfluorooctanesulfonic acid (PFOS)	**0.12**	**J I**	0.21	0.045	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.21	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.21	0.050	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.21	0.037	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.21	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.21	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.21	0.041	ug/Kg	☼	06/22/22 04:57	07/02/22 13:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C4 PFOA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C5 PFNA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C2 PFDA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C2 PFUnA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C2 PFDoA	*86*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C2 PFTeDA	*85*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C3 PFBS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
18O2 PFHxS	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C4 PFOS	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
d3-NMeFOSAA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
d5-NEtFOSAA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*
13C3 HFPO-DA	*83*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.6**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**87.4**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-7
Date Collected: 06/09/22 14:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-34
Matrix: Solid
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)	**0.090**	**J**	0.20	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorooctanoic acid (PFOA)	**0.097**	**J**	0.20	0.054	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorononanoic acid (PFNA)	**0.071**	**J**	0.20	0.022	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.049	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.031	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.038	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorohexanesulfonic acid (PFHxS)	**0.43**		0.20	0.030	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Perfluorooctanesulfonic acid (PFOS)	**1.2**		0.20	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.049	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.036	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.032	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.040	ug/Kg	☼	06/22/22 04:57	07/02/22 13:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C4 PFHpA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C5 PFNA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C2 PFDA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C2 PFUnA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C3 PFBS	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
18O2 PFHxS	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C4 PFOS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
d3-NMeFOSAA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
d5-NEtFOSAA	*96*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*
13C3 HFPO-DA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.2**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**89.8**		0.1	0.1	%			06/17/22 13:57	1

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-31
Date Collected: 06/09/22 11:10
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-35
Matrix: Solid
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		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluoroheptanoic acid (PFHpA)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorooctanoic acid (PFOA)	ND		0.23	0.060	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorononanoic acid (PFNA)	ND		0.23	0.025	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorodecanoic acid (PFDA)	ND		0.23	0.054	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluoroundecanoic acid (PFUnA)	ND		0.23	0.047	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorododecanoic acid (PFDoA)	ND		0.23	0.034	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorotridecanoic acid (PFTriA)	ND		0.23	0.024	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.23	0.042	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.23	0.043	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.23	0.033	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Perfluorooctanesulfonic acid (PFOS)	**0.44**	**I**	0.23	0.048	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.23	0.026	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.23	0.054	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.23	0.039	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.23	0.046	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.23	0.035	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.23	0.044	ug/Kg	☼	06/22/22 04:57	07/02/22 13:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C4 PFHpA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C4 PFOA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C5 PFNA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C2 PFDA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C2 PFUnA	*93*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C2 PFDoA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C2 PFTeDA	*87*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C3 PFBS	*88*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
18O2 PFHxS	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C4 PFOS	*90*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
d3-NMeFOSAA	*95*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
d5-NEtFOSAA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*
13C3 HFPO-DA	*89*		*50 - 150*	*06/22/22 04:57*	*07/02/22 13:36*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.8**		0.1	0.1	%			06/17/22 13:57	1
Percent Solids	**88.2**		0.1	0.1	%			06/17/22 13:57	1

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

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

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)
320-89051-1	22SCC-SS-22	101	102	102	101	101	102	92	97
320-89051-1 MS	22SCC-SS-22	90	97	98	101	95	98	93	93
320-89051-1 MSD	22SCC-SS-22	101	105	97	97	97	102	97	98
320-89051-2	22SCC-SS-2	92	96	102	90	88	95	88	82
320-89051-3	22SCC-SS-1	90	96	104	91	92	101	94	94
320-89051-4	22SCC-SS-5	94	95	101	93	94	100	96	100
320-89051-5	22SCC-SS-15	93	98	100	98	93	97	92	96
320-89051-6	22SCC-SS-28	93	100	101	94	100	94	88	96
320-89051-7	22SCC-SS-26	94	100	98	91	97	102	95	91
320-89051-8	22SCC-SS-17	98	99	101	104	97	97	97	87
320-89051-9	22SCC-SS-19	104	99	100	107	100	103	94	98
320-89051-10	22SCC-SS-18	97	103	99	100	98	103	92	94
320-89051-11	22SCC-SS-8	95	96	94	92	95	94	85	86
320-89051-12	22SCC-SS-3	86	100	98	99	96	100	85	84
320-89051-13	22SCC-SS-10	97	106	104	96	96	111	97	93
320-89051-14	22SCC-SS-4	93	100	93	100	103	97	90	95
320-89051-15	22SCC-SS-120	96	94	99	94	90	106	91	89
320-89051-16	22SCC-SS-6	94	100	98	95	95	105	99	95
320-89051-17	22SCC-SS-23	102	98	99	99	95	108	99	102
320-89051-18	22SCC-SS-21	102	106	106	106	97	113	99	103
320-89051-19	22SCC-SS-29	91	95	101	97	92	102	95	97
320-89051-20	22SCC-SS-20	94	91	99	89	89	97	87	81
320-89051-21	22SCC-SS-27	93	98	100	100	95	93	92	91
320-89051-21 MS	22SCC-SS-27	92	97	99	102	96	100	98	99
320-89051-21 MSD	22SCC-SS-27	90	98	94	99	97	98	100	97
320-89051-22	22SCC-SS-25	94	96	99	96	91	91	86	86
320-89051-23	22SCC-SS-24	92	100	100	99	92	93	89	87
320-89051-24	22SCC-SS-32	95	101	101	101	98	95	92	89
320-89051-25	22SCC-SS-125	95	101	100	98	93	92	89	86
320-89051-25 - DL	22SCC-SS-125								
320-89051-26	22SCC-SS-14	92	93	97	95	100	90	87	82
320-89051-27	22SCC-SS-13	90	98	95	98	94	96	92	87
320-89051-28	22SCC-SS-12	92	100	99	93	90	92	89	94
320-89051-28 - DL	22SCC-SS-12								
320-89051-29	22SCC-SS-11	93	96	98	99	92	96	94	87
320-89051-30	22SCC-SS-110	98	99	104	101	98	102	93	93
320-89051-31	22SCC-SS-9	89	95	100	99	96	91	91	92
320-89051-32	22SCC-SS-16	91	97	99	101	94	97	92	88
320-89051-33	22SCC-SS-30	94	95	95	96	89	89	86	85
320-89051-34	22SCC-SS-7	93	99	98	99	93	95	92	87
320-89051-35	22SCC-SS-31	91	98	95	97	89	93	87	87
LCS 320-597225/2-A	Lab Control Sample	94	102	97	94	95	98	92	95
LCS 320-597530/2-A	Lab Control Sample	94	101	103	99	95	95	97	94
MB 320-597225/1-A	Method Blank	91	95	96	91	92	102	92	99
MB 320-597530/1-A	Method Blank	99	103	98	102	91	101	97	102

		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)		
320-89051-1	22SCC-SS-22	90	99	97	97	103	93		

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

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	C3PFBS (50-150)	PFHxS (50-150)	PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	HFPODA (50-150)		
320-89051-1 MS	22SCC-SS-22	87	103	92	95	102	92		
320-89051-1 MSD	22SCC-SS-22	100	103	94	99	101	100		
320-89051-2	22SCC-SS-2	89	100	89	89	99	90		
320-89051-3	22SCC-SS-1	103	98	90	95	104	90		
320-89051-4	22SCC-SS-5	96	98	93	95	97	96		
320-89051-5	22SCC-SS-15	97	96	94	94	96	99		
320-89051-6	22SCC-SS-28	91	96	89	91	90	96		
320-89051-7	22SCC-SS-26	97	103	87	102	103	92		
320-89051-8	22SCC-SS-17	91	95	88	92	90	100		
320-89051-9	22SCC-SS-19	101	95	96	108	102	98		
320-89051-10	22SCC-SS-18	95	97	95	98	101	95		
320-89051-11	22SCC-SS-8	91	96	87	90	98	90		
320-89051-12	22SCC-SS-3	97	91	89	96	96	97		
320-89051-13	22SCC-SS-10	97	103	91	95	114	94		
320-89051-14	22SCC-SS-4	90	99	93	94	98	96		
320-89051-15	22SCC-SS-120	97	95	91	97	95	91		
320-89051-16	22SCC-SS-6	92	95	88	104	103	99		
320-89051-17	22SCC-SS-23	96	98	93	95	104	97		
320-89051-18	22SCC-SS-21	102	104	99	105	113	97		
320-89051-19	22SCC-SS-29	97	102	96	95	93	91		
320-89051-20	22SCC-SS-20	93	91	82	84	87	89		
320-89051-21	22SCC-SS-27	95	102	95	104	102	87		
320-89051-21 MS	22SCC-SS-27	93	99	94	104	110	83		
320-89051-21 MSD	22SCC-SS-27	91	95	95	109	115	86		
320-89051-22	22SCC-SS-25	89	95	90	98	97	86		
320-89051-23	22SCC-SS-24	94	98	94	101	102	86		
320-89051-24	22SCC-SS-32	95	97	96	104	99	88		
320-89051-25	22SCC-SS-125	96	100	94	101	99	86		
320-89051-25 - DL	22SCC-SS-125			89					
320-89051-26	22SCC-SS-14	93	97	89	94	96	88		
320-89051-27	22SCC-SS-13	89	100	91	97	97	86		
320-89051-28	22SCC-SS-12	91	98	91	101	103	86		
320-89051-28 - DL	22SCC-SS-12			90					
320-89051-29	22SCC-SS-11	92	95	93	100	96	83		
320-89051-30	22SCC-SS-110	92	102	93	107	105	88		
320-89051-31	22SCC-SS-9	91	97	93	98	98	86		
320-89051-32	22SCC-SS-16	92	98	95	101	103	83		
320-89051-33	22SCC-SS-30	94	96	88	96	93	83		
320-89051-34	22SCC-SS-7	90	97	94	96	96	91		
320-89051-35	22SCC-SS-31	88	95	90	95	97	89		
LCS 320-597225/2-A	Lab Control Sample	97	97	96	95	100	97		
LCS 320-597530/2-A	Lab Control Sample	94	101	92	104	103	91		
MB 320-597225/1-A	Method Blank	92	100	91	93	104	93		
MB 320-597530/1-A	Method Blank	94	103	94	106	108	92		

Surrogate Legend

PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA

Isotope Dilution Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

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

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

Lab Sample ID: MB 320-597225/1-A
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597225

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg		06/21/22 04:29	07/01/22 10:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		06/21/22 04:29	07/01/22 10:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C4 PFHpA	*95*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C4 PFOA	*96*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C5 PFNA	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C2 PFDA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C2 PFUnA	*102*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C2 PFDoA	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C2 PFTeDA	*99*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C3 PFBS	*92*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
18O2 PFHxS	*100*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C4 PFOS	*91*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
d3-NMeFOSAA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
d5-NEtFOSAA	*104*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*
13C3 HFPO-DA	*93*		*50 - 150*	*06/21/22 04:29*	*07/01/22 10:06*	*1*

Lab Sample ID: LCS 320-597225/2-A
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid (PFHxA)	2.00	2.13		ug/Kg		106	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	1.93		ug/Kg		97	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.10		ug/Kg		105	69 - 133
Perfluorononanoic acid (PFNA)	2.00	2.10		ug/Kg		105	72 - 129

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

Lab Sample ID: LCS 320-597225/2-A
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorodecanoic acid (PFDA)	2.00	2.07		ug/Kg		104	69 - 133
Perfluoroundecanoic acid (PFUnA)	2.00	1.97		ug/Kg		98	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	2.15		ug/Kg		108	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	2.00		ug/Kg		100	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	2.25		ug/Kg		112	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.78	1.89		ug/Kg		106	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.87		ug/Kg		103	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.98		ug/Kg		106	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.21		ug/Kg		111	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16		ug/Kg		108	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.87	1.98		ug/Kg		106	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.96		ug/Kg		98	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.89	2.04		ug/Kg		108	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.08		ug/Kg		110	79 - 139

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*102*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*94*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*98*		*50 - 150*
13C2 PFDoA	*92*		*50 - 150*
13C2 PFTeDA	*95*		*50 - 150*
13C3 PFBS	*97*		*50 - 150*
18O2 PFHxS	*97*		*50 - 150*
13C4 PFOS	*96*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
d5-NEtFOSAA	*100*		*50 - 150*
13C3 HFPO-DA	*97*		*50 - 150*

Lab Sample ID: 320-89051-1 MS
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: 22SCC-SS-22
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid (PFHxA)	ND		2.00	2.10		ug/Kg	☼	105	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		2.00	2.03		ug/Kg	☼	102	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.00	2.13		ug/Kg	☼	106	69 - 133

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

Lab Sample ID: 320-89051-1 MS
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: 22SCC-SS-22
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	ND		2.00	1.92		ug/Kg	☼	96	72 - 129
Perfluorodecanoic acid (PFDA)	ND		2.00	2.32		ug/Kg	☼	116	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.00	2.05		ug/Kg	☼	102	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.00	1.99		ug/Kg	☼	100	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.00	2.16		ug/Kg	☼	108	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.00	2.26		ug/Kg	☼	113	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND	F1	1.78	2.41	F1	ug/Kg	☼	136	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.82	1.62		ug/Kg	☼	89	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.4		1.86	3.27		ug/Kg	☼	103	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.00	2.36		ug/Kg	☼	118	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.00	2.11		ug/Kg	☼	105	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.87	1.94		ug/Kg	☼	104	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.00	2.06		ug/Kg	☼	103	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.89	1.76		ug/Kg	☼	93	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.89	2.28		ug/Kg	☼	120	79 - 139

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*97*		*50 - 150*
13C4 PFOA	*98*		*50 - 150*
13C5 PFNA	*101*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*98*		*50 - 150*
13C2 PFDoA	*93*		*50 - 150*
13C2 PFTeDA	*93*		*50 - 150*
13C3 PFBS	*87*		*50 - 150*
18O2 PFHxS	*103*		*50 - 150*
13C4 PFOS	*92*		*50 - 150*
d3-NMeFOSAA	*95*		*50 - 150*
d5-NEtFOSAA	*102*		*50 - 150*
13C3 HFPO-DA	*92*		*50 - 150*

Lab Sample ID: 320-89051-1 MSD
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: 22SCC-SS-22
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		2.03	2.13		ug/Kg	☼	105	70 - 132	1	30
Perfluoroheptanoic acid (PFHpA)	ND		2.03	2.16		ug/Kg	☼	106	71 - 131	6	30

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

Lab Sample ID: 320-89051-1 MSD
Matrix: Solid
Analysis Batch: 600108

Client Sample ID: 22SCC-SS-22
Prep Type: Total/NA
Prep Batch: 597225

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA)	ND		2.03	2.21		ug/Kg	☼	109	69 - 133	4	30
Perfluorononanoic acid (PFNA)	ND		2.03	2.07		ug/Kg	☼	102	72 - 129	8	30
Perfluorodecanoic acid (PFDA)	ND		2.03	2.36		ug/Kg	☼	116	69 - 133	2	30
Perfluoroundecanoic acid (PFUnA)	ND		2.03	2.04		ug/Kg	☼	101	64 - 136	0	30
Perfluorododecanoic acid (PFDoA)	ND		2.03	2.10		ug/Kg	☼	104	69 - 135	5	30
Perfluorotridecanoic acid (PFTriA)	ND		2.03	2.15		ug/Kg	☼	106	66 - 139	1	30
Perfluorotetradecanoic acid (PFTeA)	ND		2.03	2.28		ug/Kg	☼	112	69 - 133	1	30
Perfluorobutanesulfonic acid (PFBS)	ND	F1	1.80	2.11		ug/Kg	☼	117	72 - 128	13	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.85	1.87		ug/Kg	☼	101	67 - 130	14	30
Perfluorooctanesulfonic acid (PFOS)	1.4		1.89	3.57		ug/Kg	☼	118	68 - 136	9	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.03	2.58		ug/Kg	☼	127	63 - 144	9	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.03	2.31		ug/Kg	☼	114	61 - 139	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.90	2.18		ug/Kg	☼	115	75 - 135	12	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.03	2.13		ug/Kg	☼	105	77 - 137	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.92	2.05		ug/Kg	☼	107	76 - 136	15	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.92	2.26		ug/Kg	☼	118	79 - 139	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFHxA	*101*		*50 - 150*
13C4 PFHpA	*105*		*50 - 150*
13C4 PFOA	*97*		*50 - 150*
13C5 PFNA	*97*		*50 - 150*
13C2 PFDA	*97*		*50 - 150*
13C2 PFUnA	*102*		*50 - 150*
13C2 PFDoA	*97*		*50 - 150*
13C2 PFTeDA	*98*		*50 - 150*
13C3 PFBS	*100*		*50 - 150*
18O2 PFHxS	*103*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*99*		*50 - 150*
d5-NEtFOSAA	*101*		*50 - 150*
13C3 HFPO-DA	*100*		*50 - 150*

Lab Sample ID: MB 320-597530/1-A
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		0.20	0.031	ug/Kg		06/22/22 04:57	07/02/22 10:14	1

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

Lab Sample ID: MB 320-597530/1-A
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		0.20	0.038	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorooctanoic acid (PFOA)	ND		0.20	0.053	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorononanoic acid (PFNA)	ND		0.20	0.022	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorodecanoic acid (PFDA)	ND		0.20	0.048	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluoroundecanoic acid (PFUnA)	ND		0.20	0.042	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorododecanoic acid (PFDoA)	ND		0.20	0.030	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorotridecanoic acid (PFTriA)	ND		0.20	0.021	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.20	0.037	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.20	0.038	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.20	0.029	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.20	0.043	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.20	0.023	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		0.20	0.048	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		0.20	0.035	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		0.20	0.041	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		0.20	0.031	ug/Kg		06/22/22 04:57	07/02/22 10:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.20	0.039	ug/Kg		06/22/22 04:57	07/02/22 10:14	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*99*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C4 PFHpA	*103*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C4 PFOA	*98*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C5 PFNA	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C2 PFDA	*91*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C2 PFUnA	*101*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C2 PFDoA	*97*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C2 PFTeDA	*102*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C3 PFBS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
18O2 PFHxS	*103*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C4 PFOS	*94*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
d3-NMeFOSAA	*106*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
d5-NEtFOSAA	*108*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*
13C3 HFPO-DA	*92*		*50 - 150*	*06/22/22 04:57*	*07/02/22 10:14*	*1*

Lab Sample ID: LCS 320-597530/2-A
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid (PFHxA)	2.00	1.95		ug/Kg		98	70 - 132
Perfluoroheptanoic acid (PFHpA)	2.00	1.94		ug/Kg		97	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	1.92		ug/Kg		96	69 - 133
Perfluorononanoic acid (PFNA)	2.00	1.98		ug/Kg		99	72 - 129
Perfluorodecanoic acid (PFDA)	2.00	1.95		ug/Kg		97	69 - 133

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

Lab Sample ID: LCS 320-597530/2-A
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.83		ug/Kg		92	64 - 136
Perfluorododecanoic acid (PFDoA)	2.00	1.90		ug/Kg		95	69 - 135
Perfluorotridecanoic acid (PFTriA)	2.00	1.91		ug/Kg		95	66 - 139
Perfluorotetradecanoic acid (PFTeA)	2.00	1.93		ug/Kg		96	69 - 133
Perfluorobutanesulfonic acid (PFBS)	1.78	1.83		ug/Kg		103	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.67		ug/Kg		91	67 - 130
Perfluorooctanesulfonic acid (PFOS)	1.86	1.93		ug/Kg		104	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.67		ug/Kg		84	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.08		ug/Kg		104	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.87	1.89		ug/Kg		101	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	2.00	1.98		ug/Kg		99	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.89	1.94		ug/Kg		103	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.18		ug/Kg		115	79 - 139

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFHxA	*94*		*50 - 150*
13C4 PFHpA	*101*		*50 - 150*
13C4 PFOA	*103*		*50 - 150*
13C5 PFNA	*99*		*50 - 150*
13C2 PFDA	*95*		*50 - 150*
13C2 PFUnA	*95*		*50 - 150*
13C2 PFDoA	*97*		*50 - 150*
13C2 PFTeDA	*94*		*50 - 150*
13C3 PFBS	*94*		*50 - 150*
18O2 PFHxS	*101*		*50 - 150*
13C4 PFOS	*92*		*50 - 150*
d3-NMeFOSAA	*104*		*50 - 150*
d5-NEtFOSAA	*103*		*50 - 150*
13C3 HFPO-DA	*91*		*50 - 150*

Lab Sample ID: 320-89051-21 MS
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: 22SCC-SS-27
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid (PFHxA)	ND		2.01	2.02		ug/Kg	☼	100	70 - 132
Perfluoroheptanoic acid (PFHpA)	ND		2.01	2.07		ug/Kg	☼	103	71 - 131
Perfluorooctanoic acid (PFOA)	ND		2.01	1.95		ug/Kg	☼	97	69 - 133
Perfluorononanoic acid (PFNA)	ND		2.01	1.99		ug/Kg	☼	99	72 - 129

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

Lab Sample ID: 320-89051-21 MS
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: 22SCC-SS-27
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorodecanoic acid (PFDA)	ND		2.01	2.18		ug/Kg	☼	109	69 - 133
Perfluoroundecanoic acid (PFUnA)	ND		2.01	1.81		ug/Kg	☼	90	64 - 136
Perfluorododecanoic acid (PFDoA)	ND		2.01	2.02		ug/Kg	☼	100	69 - 135
Perfluorotridecanoic acid (PFTriA)	ND		2.01	2.03		ug/Kg	☼	101	66 - 139
Perfluorotetradecanoic acid (PFTeA)	ND		2.01	1.96		ug/Kg	☼	97	69 - 133
Perfluorobutanesulfonic acid (PFBS)	ND		1.79	1.91		ug/Kg	☼	107	72 - 128
Perfluorohexanesulfonic acid (PFHxS)	ND		1.84	1.74		ug/Kg	☼	95	67 - 130
Perfluorooctanesulfonic acid (PFOS)	0.62	I	1.87	2.76		ug/Kg	☼	114	68 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.01	1.90		ug/Kg	☼	94	63 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.01	2.11		ug/Kg	☼	105	61 - 139
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.88	1.81		ug/Kg	☼	96	75 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.01	2.26		ug/Kg	☼	112	77 - 137
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.90	1.73		ug/Kg	☼	91	76 - 136
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.90	2.14		ug/Kg	☼	113	79 - 139

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFHxA	*92*		*50 - 150*
13C4 PFHpA	*97*		*50 - 150*
13C4 PFOA	*99*		*50 - 150*
13C5 PFNA	*102*		*50 - 150*
13C2 PFDA	*96*		*50 - 150*
13C2 PFUnA	*100*		*50 - 150*
13C2 PFDoA	*98*		*50 - 150*
13C2 PFTeDA	*99*		*50 - 150*
13C3 PFBS	*93*		*50 - 150*
18O2 PFHxS	*99*		*50 - 150*
13C4 PFOS	*94*		*50 - 150*
d3-NMeFOSAA	*104*		*50 - 150*
d5-NEtFOSAA	*110*		*50 - 150*
13C3 HFPO-DA	*83*		*50 - 150*

Lab Sample ID: 320-89051-21 MSD
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: 22SCC-SS-27
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	ND		1.96	1.91		ug/Kg	☼	97	70 - 132	6	30
Perfluoroheptanoic acid (PFHpA)	ND		1.96	2.01		ug/Kg	☼	102	71 - 131	3	30
Perfluorooctanoic acid (PFOA)	ND		1.96	2.04		ug/Kg	☼	104	69 - 133	5	30

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

Lab Sample ID: 320-89051-21 MSD
Matrix: Solid
Analysis Batch: 600382

Client Sample ID: 22SCC-SS-27
Prep Type: Total/NA
Prep Batch: 597530

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	ND		1.96	1.98		ug/Kg	☼	101	72 - 129	1	30
Perfluorodecanoic acid (PFDA)	ND		1.96	2.18		ug/Kg	☼	111	69 - 133	0	30
Perfluoroundecanoic acid (PFUnA)	ND		1.96	1.85		ug/Kg	☼	94	64 - 136	2	30
Perfluorododecanoic acid (PFDoA)	ND		1.96	1.96		ug/Kg	☼	100	69 - 135	3	30
Perfluorotridecanoic acid (PFTriA)	ND		1.96	2.01		ug/Kg	☼	102	66 - 139	1	30
Perfluorotetradecanoic acid (PFTeA)	ND		1.96	1.94		ug/Kg	☼	99	69 - 133	1	30
Perfluorobutanesulfonic acid (PFBS)	ND		1.74	1.70		ug/Kg	☼	97	72 - 128	12	30
Perfluorohexanesulfonic acid (PFHxS)	ND		1.79	1.79		ug/Kg	☼	100	67 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	0.62	I	1.83	2.56		ug/Kg	☼	106	68 - 136	8	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.96	1.77		ug/Kg	☼	90	63 - 144	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.96	2.03		ug/Kg	☼	103	61 - 139	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		1.83	1.78		ug/Kg	☼	97	75 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.96	2.02		ug/Kg	☼	103	77 - 137	11	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1.85	1.69		ug/Kg	☼	91	76 - 136	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.85	1.99		ug/Kg	☼	107	79 - 139	7	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFHxA	*90*		*50 - 150*
13C4 PFHpA	*98*		*50 - 150*
13C4 PFOA	*94*		*50 - 150*
13C5 PFNA	*99*		*50 - 150*
13C2 PFDA	*97*		*50 - 150*
13C2 PFUnA	*98*		*50 - 150*
13C2 PFDoA	*100*		*50 - 150*
13C2 PFTeDA	*97*		*50 - 150*
13C3 PFBS	*91*		*50 - 150*
18O2 PFHxS	*95*		*50 - 150*
13C4 PFOS	*95*		*50 - 150*
d3-NMeFOSAA	*109*		*50 - 150*
d5-NEtFOSAA	*115*		*50 - 150*
13C3 HFPO-DA	*86*		*50 - 150*

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-89051-11 DU
Matrix: Solid
Analysis Batch: 596061

Client Sample ID: 22SCC-SS-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	9.4			12.6	F3	%				28	20
Percent Solids	90.6			87.4		%				4	20

LCMS

Prep Batch: 597225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-1	22SCC-SS-22	Total/NA	Solid	SHAKE	
320-89051-2	22SCC-SS-2	Total/NA	Solid	SHAKE	
320-89051-3	22SCC-SS-1	Total/NA	Solid	SHAKE	
320-89051-4	22SCC-SS-5	Total/NA	Solid	SHAKE	
320-89051-5	22SCC-SS-15	Total/NA	Solid	SHAKE	
320-89051-6	22SCC-SS-28	Total/NA	Solid	SHAKE	
320-89051-7	22SCC-SS-26	Total/NA	Solid	SHAKE	
320-89051-8	22SCC-SS-17	Total/NA	Solid	SHAKE	
320-89051-9	22SCC-SS-19	Total/NA	Solid	SHAKE	
320-89051-10	22SCC-SS-18	Total/NA	Solid	SHAKE	
320-89051-11	22SCC-SS-8	Total/NA	Solid	SHAKE	
320-89051-12	22SCC-SS-3	Total/NA	Solid	SHAKE	
320-89051-13	22SCC-SS-10	Total/NA	Solid	SHAKE	
320-89051-14	22SCC-SS-4	Total/NA	Solid	SHAKE	
320-89051-15	22SCC-SS-120	Total/NA	Solid	SHAKE	
320-89051-16	22SCC-SS-6	Total/NA	Solid	SHAKE	
320-89051-17	22SCC-SS-23	Total/NA	Solid	SHAKE	
320-89051-18	22SCC-SS-21	Total/NA	Solid	SHAKE	
320-89051-19	22SCC-SS-29	Total/NA	Solid	SHAKE	
320-89051-20	22SCC-SS-20	Total/NA	Solid	SHAKE	
MB 320-597225/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-597225/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-89051-1 MS	22SCC-SS-22	Total/NA	Solid	SHAKE	
320-89051-1 MSD	22SCC-SS-22	Total/NA	Solid	SHAKE	

Prep Batch: 597530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-21	22SCC-SS-27	Total/NA	Solid	SHAKE	
320-89051-22	22SCC-SS-25	Total/NA	Solid	SHAKE	
320-89051-23	22SCC-SS-24	Total/NA	Solid	SHAKE	
320-89051-24	22SCC-SS-32	Total/NA	Solid	SHAKE	
320-89051-25 - DL	22SCC-SS-125	Total/NA	Solid	SHAKE	
320-89051-25	22SCC-SS-125	Total/NA	Solid	SHAKE	
320-89051-26	22SCC-SS-14	Total/NA	Solid	SHAKE	
320-89051-27	22SCC-SS-13	Total/NA	Solid	SHAKE	
320-89051-28	22SCC-SS-12	Total/NA	Solid	SHAKE	
320-89051-28 - DL	22SCC-SS-12	Total/NA	Solid	SHAKE	
320-89051-29	22SCC-SS-11	Total/NA	Solid	SHAKE	
320-89051-30	22SCC-SS-110	Total/NA	Solid	SHAKE	
320-89051-31	22SCC-SS-9	Total/NA	Solid	SHAKE	
320-89051-32	22SCC-SS-16	Total/NA	Solid	SHAKE	
320-89051-33	22SCC-SS-30	Total/NA	Solid	SHAKE	
320-89051-34	22SCC-SS-7	Total/NA	Solid	SHAKE	
320-89051-35	22SCC-SS-31	Total/NA	Solid	SHAKE	
MB 320-597530/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-597530/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-89051-21 MS	22SCC-SS-27	Total/NA	Solid	SHAKE	
320-89051-21 MSD	22SCC-SS-27	Total/NA	Solid	SHAKE	

LCMS

Analysis Batch: 600108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-1	22SCC-SS-22	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-2	22SCC-SS-2	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-3	22SCC-SS-1	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-4	22SCC-SS-5	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-5	22SCC-SS-15	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-6	22SCC-SS-28	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-7	22SCC-SS-26	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-8	22SCC-SS-17	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-9	22SCC-SS-19	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-10	22SCC-SS-18	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-11	22SCC-SS-8	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-12	22SCC-SS-3	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-13	22SCC-SS-10	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-14	22SCC-SS-4	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-15	22SCC-SS-120	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-16	22SCC-SS-6	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-17	22SCC-SS-23	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-18	22SCC-SS-21	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-19	22SCC-SS-29	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-20	22SCC-SS-20	Total/NA	Solid	EPA 537(Mod)	597225
MB 320-597225/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	597225
LCS 320-597225/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-1 MS	22SCC-SS-22	Total/NA	Solid	EPA 537(Mod)	597225
320-89051-1 MSD	22SCC-SS-22	Total/NA	Solid	EPA 537(Mod)	597225

Analysis Batch: 600382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-21	22SCC-SS-27	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-22	22SCC-SS-25	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-23	22SCC-SS-24	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-24	22SCC-SS-32	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-25	22SCC-SS-125	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-26	22SCC-SS-14	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-27	22SCC-SS-13	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-28	22SCC-SS-12	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-29	22SCC-SS-11	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-30	22SCC-SS-110	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-31	22SCC-SS-9	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-32	22SCC-SS-16	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-33	22SCC-SS-30	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-34	22SCC-SS-7	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-35	22SCC-SS-31	Total/NA	Solid	EPA 537(Mod)	597530
MB 320-597530/1-A	Method Blank	Total/NA	Solid	EPA 537(Mod)	597530
LCS 320-597530/2-A	Lab Control Sample	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-21 MS	22SCC-SS-27	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-21 MSD	22SCC-SS-27	Total/NA	Solid	EPA 537(Mod)	597530

Analysis Batch: 600871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-25 - DL	22SCC-SS-125	Total/NA	Solid	EPA 537(Mod)	597530
320-89051-28 - DL	22SCC-SS-12	Total/NA	Solid	EPA 537(Mod)	597530

General Chemistry

Analysis Batch: 595968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-2	22SCC-SS-2	Total/NA	Solid	D 2216	
320-89051-3	22SCC-SS-1	Total/NA	Solid	D 2216	
320-89051-4	22SCC-SS-5	Total/NA	Solid	D 2216	
320-89051-12	22SCC-SS-3	Total/NA	Solid	D 2216	
320-89051-14	22SCC-SS-4	Total/NA	Solid	D 2216	
320-89051-16	22SCC-SS-6	Total/NA	Solid	D 2216	

Analysis Batch: 596060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-27	22SCC-SS-13	Total/NA	Solid	D 2216	

Analysis Batch: 596061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-1	22SCC-SS-22	Total/NA	Solid	D 2216	
320-89051-5	22SCC-SS-15	Total/NA	Solid	D 2216	
320-89051-6	22SCC-SS-28	Total/NA	Solid	D 2216	
320-89051-7	22SCC-SS-26	Total/NA	Solid	D 2216	
320-89051-8	22SCC-SS-17	Total/NA	Solid	D 2216	
320-89051-9	22SCC-SS-19	Total/NA	Solid	D 2216	
320-89051-10	22SCC-SS-18	Total/NA	Solid	D 2216	
320-89051-11	22SCC-SS-8	Total/NA	Solid	D 2216	
320-89051-13	22SCC-SS-10	Total/NA	Solid	D 2216	
320-89051-15	22SCC-SS-120	Total/NA	Solid	D 2216	
320-89051-17	22SCC-SS-23	Total/NA	Solid	D 2216	
320-89051-18	22SCC-SS-21	Total/NA	Solid	D 2216	
320-89051-19	22SCC-SS-29	Total/NA	Solid	D 2216	
320-89051-20	22SCC-SS-20	Total/NA	Solid	D 2216	
320-89051-21	22SCC-SS-27	Total/NA	Solid	D 2216	
320-89051-22	22SCC-SS-25	Total/NA	Solid	D 2216	
320-89051-23	22SCC-SS-24	Total/NA	Solid	D 2216	
320-89051-24	22SCC-SS-32	Total/NA	Solid	D 2216	
320-89051-25	22SCC-SS-125	Total/NA	Solid	D 2216	
320-89051-26	22SCC-SS-14	Total/NA	Solid	D 2216	
320-89051-11 DU	22SCC-SS-8	Total/NA	Solid	D 2216	

Analysis Batch: 596285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-89051-28	22SCC-SS-12	Total/NA	Solid	D 2216	
320-89051-29	22SCC-SS-11	Total/NA	Solid	D 2216	
320-89051-30	22SCC-SS-110	Total/NA	Solid	D 2216	
320-89051-31	22SCC-SS-9	Total/NA	Solid	D 2216	
320-89051-32	22SCC-SS-16	Total/NA	Solid	D 2216	
320-89051-33	22SCC-SS-30	Total/NA	Solid	D 2216	
320-89051-34	22SCC-SS-7	Total/NA	Solid	D 2216	
320-89051-35	22SCC-SS-31	Total/NA	Solid	D 2216	

Client Sample ID: 22SCC-SS-22
Lab Sample ID: 320-89051-1
Date Collected: 06/09/22 08:15
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-22
Lab Sample ID: 320-89051-1
Date Collected: 06/09/22 08:15
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 10:26	K1S	TAL SAC

Client Sample ID: 22SCC-SS-2
Lab Sample ID: 320-89051-2
Date Collected: 06/08/22 13:50
Matrix: Solid
Date Received: 06/14/22 11:25

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			595968	06/16/22 14:26	KMW	TAL SAC

Client Sample ID: 22SCC-SS-2
Lab Sample ID: 320-89051-2
Date Collected: 06/08/22 13:50
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 87.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 10:57	K1S	TAL SAC

Client Sample ID: 22SCC-SS-1
Lab Sample ID: 320-89051-3
Date Collected: 06/08/22 13:40
Matrix: Solid
Date Received: 06/14/22 11:25

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			595968	06/16/22 14:26	KMW	TAL SAC

Client Sample ID: 22SCC-SS-1
Lab Sample ID: 320-89051-3
Date Collected: 06/08/22 13:40
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 11:07	K1S	TAL SAC

Client Sample ID: 22SCC-SS-5
Lab Sample ID: 320-89051-4
Date Collected: 06/08/22 14:50
Matrix: Solid
Date Received: 06/14/22 11:25

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			595968	06/16/22 14:26	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-5
Date Collected: 06/08/22 14:50
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-4
Matrix: Solid
Percent Solids: 90.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 11:17	K1S	TAL SAC

Client Sample ID: 22SCC-SS-15
Date Collected: 06/09/22 06:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-5
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-15
Date Collected: 06/09/22 06:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-5
Matrix: Solid
Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 11:27	K1S	TAL SAC

Client Sample ID: 22SCC-SS-28
Date Collected: 06/09/22 10:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-6
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-28
Date Collected: 06/09/22 10:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-6
Matrix: Solid
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.15 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 11:37	K1S	TAL SAC

Client Sample ID: 22SCC-SS-26
Date Collected: 06/09/22 10:25
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-7
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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-26
Lab Sample ID: 320-89051-7
Date Collected: 06/09/22 10:25
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.29 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:08	K1S	TAL SAC

Client Sample ID: 22SCC-SS-17
Lab Sample ID: 320-89051-8
Date Collected: 06/09/22 07:30
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-17
Lab Sample ID: 320-89051-8
Date Collected: 06/09/22 07:30
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.04 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:18	K1S	TAL SAC

Client Sample ID: 22SCC-SS-19
Lab Sample ID: 320-89051-9
Date Collected: 06/09/22 08:35
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-19
Lab Sample ID: 320-89051-9
Date Collected: 06/09/22 08:35
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:28	K1S	TAL SAC

Client Sample ID: 22SCC-SS-18
Lab Sample ID: 320-89051-10
Date Collected: 06/09/22 07:40
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-18
Date Collected: 06/09/22 07:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-10
Matrix: Solid
Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:38	K1S	TAL SAC

Client Sample ID: 22SCC-SS-8
Date Collected: 06/09/22 14:10
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-11
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-8
Date Collected: 06/09/22 14:10
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-11
Matrix: Solid
Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.50 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:48	K1S	TAL SAC

Client Sample ID: 22SCC-SS-3
Date Collected: 06/08/22 14:15
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-12
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			595968	06/16/22 14:26	KMW	TAL SAC

Client Sample ID: 22SCC-SS-3
Date Collected: 06/08/22 14:15
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-12
Matrix: Solid
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 12:58	K1S	TAL SAC

Client Sample ID: 22SCC-SS-10
Date Collected: 06/09/22 14:50
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-13
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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-10
Lab Sample ID: 320-89051-13
Date Collected: 06/09/22 14:50
Matrix: Solid
Date Received: 06/14/22 11:25
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			5.34 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 13:08	K1S	TAL SAC

Client Sample ID: 22SCC-SS-4
Lab Sample ID: 320-89051-14
Date Collected: 06/08/22 14:25
Matrix: Solid
Date Received: 06/14/22 11:25

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			595968	06/16/22 14:26	KMW	TAL SAC

Client Sample ID: 22SCC-SS-4
Lab Sample ID: 320-89051-14
Date Collected: 06/08/22 14:25
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 13:18	K1S	TAL SAC

Client Sample ID: 22SCC-SS-120
Lab Sample ID: 320-89051-15
Date Collected: 06/09/22 08:55
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-120
Lab Sample ID: 320-89051-15
Date Collected: 06/09/22 08:55
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 13:29	K1S	TAL SAC

Client Sample ID: 22SCC-SS-6
Lab Sample ID: 320-89051-16
Date Collected: 06/08/22 15:00
Matrix: Solid
Date Received: 06/14/22 11:25

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			595968	06/16/22 14:26	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-6
Date Collected: 06/08/22 15:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-16
Matrix: Solid
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.50 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 13:39	K1S	TAL SAC

Client Sample ID: 22SCC-SS-23
Date Collected: 06/09/22 09:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-17
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-23
Date Collected: 06/09/22 09:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-17
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			5.03 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 14:09	K1S	TAL SAC

Client Sample ID: 22SCC-SS-21
Date Collected: 06/09/22 08:05
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-18
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-21
Date Collected: 06/09/22 08:05
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-18
Matrix: Solid
Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 14:19	K1S	TAL SAC

Client Sample ID: 22SCC-SS-29
Date Collected: 06/09/22 10:45
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-19
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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-29
Lab Sample ID: 320-89051-19
Date Collected: 06/09/22 10:45
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 88.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 14:29	K1S	TAL SAC

Client Sample ID: 22SCC-SS-20
Lab Sample ID: 320-89051-20
Date Collected: 06/09/22 08:45
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-20
Lab Sample ID: 320-89051-20
Date Collected: 06/09/22 08:45
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 80.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	597225	06/21/22 04:29	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600108	07/01/22 14:39	K1S	TAL SAC

Client Sample ID: 22SCC-SS-27
Lab Sample ID: 320-89051-21
Date Collected: 06/09/22 10:30
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-27
Lab Sample ID: 320-89051-21
Date Collected: 06/09/22 10:30
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 10:34	D1R	TAL SAC

Client Sample ID: 22SCC-SS-25
Lab Sample ID: 320-89051-22
Date Collected: 06/09/22 10:15
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-25
Lab Sample ID: 320-89051-22
Date Collected: 06/09/22 10:15
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 11:04	D1R	TAL SAC

Client Sample ID: 22SCC-SS-24
Lab Sample ID: 320-89051-23
Date Collected: 06/09/22 09:55
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-24
Lab Sample ID: 320-89051-23
Date Collected: 06/09/22 09:55
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 11:14	D1R	TAL SAC

Client Sample ID: 22SCC-SS-32
Lab Sample ID: 320-89051-24
Date Collected: 06/09/22 11:00
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-32
Lab Sample ID: 320-89051-24
Date Collected: 06/09/22 11:00
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 11:24	D1R	TAL SAC

Client Sample ID: 22SCC-SS-125
Lab Sample ID: 320-89051-25
Date Collected: 06/09/22 10:05
Matrix: Solid
Date Received: 06/14/22 11:25

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			596061	06/16/22 16:52	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-125
Date Collected: 06/09/22 10:05
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-25
Matrix: Solid
Percent Solids: 88.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.12 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 11:34	D1R	TAL SAC
Total/NA	Prep	SHAKE	DL		5.12 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			600871	07/05/22 17:48	RS1	TAL SAC

Client Sample ID: 22SCC-SS-14
Date Collected: 06/09/22 16:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-26
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			596061	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-14
Date Collected: 06/09/22 16:00
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-26
Matrix: Solid
Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 11:45	D1R	TAL SAC

Client Sample ID: 22SCC-SS-13
Date Collected: 06/09/22 15:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-27
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			596060	06/16/22 16:52	KMW	TAL SAC

Client Sample ID: 22SCC-SS-13
Date Collected: 06/09/22 15:55
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-27
Matrix: Solid
Percent Solids: 87.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.04 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 12:15	D1R	TAL SAC

Client Sample ID: 22SCC-SS-12
Date Collected: 06/09/22 15:40
Date Received: 06/14/22 11:25

Lab Sample ID: 320-89051-28
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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-12
Lab Sample ID: 320-89051-28
Date Collected: 06/09/22 15:40
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.34 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 12:25	D1R	TAL SAC
Total/NA	Prep	SHAKE	DL		5.34 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)	DL	5			600871	07/05/22 17:58	RS1	TAL SAC

Client Sample ID: 22SCC-SS-11
Lab Sample ID: 320-89051-29
Date Collected: 06/09/22 15:30
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-11
Lab Sample ID: 320-89051-29
Date Collected: 06/09/22 15:30
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 89.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 12:35	D1R	TAL SAC

Client Sample ID: 22SCC-SS-110
Lab Sample ID: 320-89051-30
Date Collected: 06/09/22 14:40
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-110
Lab Sample ID: 320-89051-30
Date Collected: 06/09/22 14:40
Matrix: Solid
Date Received: 06/14/22 11:25
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			5.44 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 12:45	D1R	TAL SAC

Client Sample ID: 22SCC-SS-9
Lab Sample ID: 320-89051-31
Date Collected: 06/09/22 14:35
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-9
Lab Sample ID: 320-89051-31
Date Collected: 06/09/22 14:35
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.42 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 12:55	D1R	TAL SAC

Client Sample ID: 22SCC-SS-16
Lab Sample ID: 320-89051-32
Date Collected: 06/09/22 06:55
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-16
Lab Sample ID: 320-89051-32
Date Collected: 06/09/22 06:55
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.20 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 13:05	D1R	TAL SAC

Client Sample ID: 22SCC-SS-30
Lab Sample ID: 320-89051-33
Date Collected: 06/09/22 10:55
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-30
Lab Sample ID: 320-89051-33
Date Collected: 06/09/22 10:55
Matrix: Solid
Date Received: 06/14/22 11:25
Percent Solids: 87.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.47 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 13:15	D1R	TAL SAC

Client Sample ID: 22SCC-SS-7
Lab Sample ID: 320-89051-34
Date Collected: 06/09/22 14:00
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Lab Chronicle

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Client Sample ID: 22SCC-SS-7

Lab Sample ID: 320-89051-34
Date Collected: 06/09/22 14:00
Matrix: Solid
Date Received: 06/14/22 11:25
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			5.47 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 13:25	D1R	TAL SAC

Client Sample ID: 22SCC-SS-31

Lab Sample ID: 320-89051-35
Date Collected: 06/09/22 11:10
Matrix: Solid
Date Received: 06/14/22 11:25

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			596285	06/17/22 13:57	KMW	TAL SAC

Client Sample ID: 22SCC-SS-31

Lab Sample ID: 320-89051-35
Date Collected: 06/09/22 11:10
Matrix: Solid
Date Received: 06/14/22 11:25
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			5.04 g	10.0 mL	597530	06/22/22 04:57	HK	TAL SAC
Total/NA	Analysis	EPA 537(Mod)		1			600382	07/02/22 13:36	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Laboratory: Eurofins 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

Method Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

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 Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Shannon & Wilson, Inc
Project/Site: Deadhorse Airport

Job ID: 320-89051-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-89051-1	22SCC-SS-22	Solid	06/09/22 08:15	06/14/22 11:25
320-89051-2	22SCC-SS-2	Solid	06/08/22 13:50	06/14/22 11:25
320-89051-3	22SCC-SS-1	Solid	06/08/22 13:40	06/14/22 11:25
320-89051-4	22SCC-SS-5	Solid	06/08/22 14:50	06/14/22 11:25
320-89051-5	22SCC-SS-15	Solid	06/09/22 06:45	06/14/22 11:25
320-89051-6	22SCC-SS-28	Solid	06/09/22 10:40	06/14/22 11:25
320-89051-7	22SCC-SS-26	Solid	06/09/22 10:25	06/14/22 11:25
320-89051-8	22SCC-SS-17	Solid	06/09/22 07:30	06/14/22 11:25
320-89051-9	22SCC-SS-19	Solid	06/09/22 08:35	06/14/22 11:25
320-89051-10	22SCC-SS-18	Solid	06/09/22 07:40	06/14/22 11:25
320-89051-11	22SCC-SS-8	Solid	06/09/22 14:10	06/14/22 11:25
320-89051-12	22SCC-SS-3	Solid	06/08/22 14:15	06/14/22 11:25
320-89051-13	22SCC-SS-10	Solid	06/09/22 14:50	06/14/22 11:25
320-89051-14	22SCC-SS-4	Solid	06/08/22 14:25	06/14/22 11:25
320-89051-15	22SCC-SS-120	Solid	06/09/22 08:55	06/14/22 11:25
320-89051-16	22SCC-SS-6	Solid	06/08/22 15:00	06/14/22 11:25
320-89051-17	22SCC-SS-23	Solid	06/09/22 09:45	06/14/22 11:25
320-89051-18	22SCC-SS-21	Solid	06/09/22 08:05	06/14/22 11:25
320-89051-19	22SCC-SS-29	Solid	06/09/22 10:45	06/14/22 11:25
320-89051-20	22SCC-SS-20	Solid	06/09/22 08:45	06/14/22 11:25
320-89051-21	22SCC-SS-27	Solid	06/09/22 10:30	06/14/22 11:25
320-89051-22	22SCC-SS-25	Solid	06/09/22 10:15	06/14/22 11:25
320-89051-23	22SCC-SS-24	Solid	06/09/22 09:55	06/14/22 11:25
320-89051-24	22SCC-SS-32	Solid	06/09/22 11:00	06/14/22 11:25
320-89051-25	22SCC-SS-125	Solid	06/09/22 10:05	06/14/22 11:25
320-89051-26	22SCC-SS-14	Solid	06/09/22 16:00	06/14/22 11:25
320-89051-27	22SCC-SS-13	Solid	06/09/22 15:55	06/14/22 11:25
320-89051-28	22SCC-SS-12	Solid	06/09/22 15:40	06/14/22 11:25
320-89051-29	22SCC-SS-11	Solid	06/09/22 15:30	06/14/22 11:25
320-89051-30	22SCC-SS-110	Solid	06/09/22 14:40	06/14/22 11:25
320-89051-31	22SCC-SS-9	Solid	06/09/22 14:35	06/14/22 11:25
320-89051-32	22SCC-SS-16	Solid	06/09/22 06:55	06/14/22 11:25
320-89051-33	22SCC-SS-30	Solid	06/09/22 10:55	06/14/22 11:25
320-89051-34	22SCC-SS-7	Solid	06/09/22 14:00	06/14/22 11:25
320-89051-35	22SCC-SS-31	Solid	06/09/22 11:10	06/14/22 11:25

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2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600
www.shannonwilson.com

CHAIN-OF-CUSTODY RECORD

Laboratory Eurofins Test America
Attn: David Allaker

Turn Around Time:	Quote No:
☒ Normal ☐ Rush	J-Flags: ☒ Yes ☐ No
Please Specify	

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	PFAS (QSM 5.3 Table B-15)	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
22SCC-SS-22		0815	6-9-22	X	1	Soil Grab
22SCC-SS-2		1350	6-8-22			
22SCC-SS-1		1340	6-8-22			
22SCC-SS-5		1450	6-8-22			
22SCC-SS-15		0645	6-9-22			
22SCC-SS-28		1040	6-9-22			
22SCC-SS-26		1025	6-9-22			
22SCC-SS-17		0730	6-9-22			
22SCC-SS-19		0835	6-9-22			
22SCC-SS-18		0740	6-9-22			

320-89051 Chain of Custody

Project Information	
Number:	106427-001
Name:	Deadhorse Airport
Contact:	Michael Jaramillo
Ongoing Project?	Yes ☒ No ☐
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	
Delivery Method:	

Reliquished By: 1.	Reliquished By: 2.	Reliquished By: 3.
Signature: Time: 1400	Signature: Time:	Signature: Time:
Printed Name: Mason Crake Date: 6-10-22	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1125	Signature: Time:	Signature: Time:
Printed Name: Salvador Lopez Date: 6-14-22	Printed Name: Date:	Printed Name: Date:
Company: EETSoc	Company:	Company:

Notes:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

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No. _____

7/7/2022

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CHAIN-OF-CUSTODY RECORD

Laboratory Eurofins Test America
Attn: David Allbrecht

Turn Around Time: [X] Normal [ ] Rush — Please Specify

Quote No:

J-Flags: [X] Yes [ ] No

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	PFAS (DOM 5.3 Table B-15)	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
22SCC-SS-8		1410	6-9-22	X	1	Soil Grab
22SCC-SS-3		1415	6-8-22			
22SCC-SS-10		1450	6-9-22			
22SCC-SS-4		1425	6-8-22			
22SCC-SS-120		0855	6-9-22			
22SCC-SS-6		1500	6-8-22			
22SCC-SS-23		0945	6-9-22			
22SCC-SS-21		0805	6-9-22			
22SCC-SS-29		1045	6-9-22			
22SCC-SS-20		0845	6-9-22			

Project Information	
Number:	1064427-001
Name:	Deadhorse Airport
Contact:	Michael Jorgensen
Ongoing Project?	Yes [X] No [ ]
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	
Delivery Method:	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1400	Signature: Time:	Signature: Time:
Printed Name: Mason Crater Date: 6-10-22	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1125	Signature: Time:	Signature: Time:
Printed Name: Salvador Orozco Date: 6-17-22	Printed Name: Date:	Printed Name: Date:
Company: Eurofins	Company:	Company:

Notes:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

60

No.

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CHAIN-OF-CUSTODY RECORD

Laboratory Evalina Test America
Attn: David Allfucker

Turn Around Time:	Quote No:
☒ Normal ☐ Rush	J-Flags: ☒ Yes ☐ No
Please Specify	

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	PFAS (LCSM 5.3 Table B-15)	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
22SCC-SS-27		1030	6-9-22	X	1	Soil Grab
22SCC-SS-25		1015	6-9-22			
22SCC-SS-24		0955	6-9-22			
22SCC-SS-32		1100	6-9-22			
22SCC-SS-125		1005	6-9-22			
22SCC-SS-14		1600	6-9-22			
22SCC-SS-13		1555	6-9-22			
22SCC-SS-12		1540	6-9-22			
22SCC-SS-11		1530	6-9-22			
22SCC-SS-110		1440	6-9-22			

Project Information	
Number:	106427-001
Name:	Deadhorse Airport
Contact:	Michael Jaigwillo
Ongoing Project?	Yes ☒ No ☐
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	
Delivery Method:	

Notes:

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1400	Signature: Time:	Signature: Time:
Printed Name: Mason Croker Date: 6-10-22	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1125	Signature: Time:	Signature: Time:
Printed Name: Salvador Orozco Date: 6/14/22	Printed Name: Date:	Printed Name: Date:
Company: EETSac	Company:	Company:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

G.J

No. _____

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CHAIN-OF-CUSTODY RECORD

Laboratory _____
Attn: _____

Turn Around Time: ☒ Normal ☐ Rush — Please Specify

Quote No:

J-Flags: ☒ Yes ☐ No

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	PFAS (DSM 5.3 Table B-1)	Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
22SCC-SS-9		1435	6-9-22	X	1	Soil Grab
22SCC-SS-16		0655	6-9-22			
22SCC-SS-30		1055	6-9-22			
22SCC-SS-7		1400	6-9-22			
22SCC-SS-31		1110	6-9-22			

Project Information	
Number:	126427-001
Name:	Deadhorse Airport
Contact:	Michael Jaremillo
Ongoing Project?	Yes ☒ No ☐
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	
Delivery Method:	

Notes:

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1400	Signature: Time:	Signature: Time:
Printed Name: Mason Crake Date: 6-10-22	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 6-14-22	Signature: Time:	Signature: Time:
Printed Name: Salvador Ordaz Date: 1125	Printed Name: Date:	Printed Name: Date:
Company: EETSe	Company:	Company:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

6.0

No. _____

Login Sample Receipt Checklist

Client: Shannon & Wilson, Inc

Job Number: 320-89051-1

Login Number: 89051
List Number: 1
Creator: Her, David A

List Source: Eurofins 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	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	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 <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:

Michael Jaramillo

Title:

Senior Chemist

Date:

July 11, 2022

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

Eurofins Environmental Testing America (Eurofins)

Laboratory Report Number:

320-89051-1

Laboratory Report Date:

July 7, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

ADEC File Number:

N/A; not directly associated with a contaminated site

Hazard Identification Number:

N/A; not directly associated with a contaminated site

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July 7, 2022

CS Site Name:

Deadhorse Airport DOT&PF 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 Eurofins 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. The reported analytes are 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 requested analyses were conducted by Eurofins of West Sacramento, CA.

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:

   Sample preservation aside from temperature control is not required.

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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 were received 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:

There were no additional discrepancies noted by the laboratory.

e. Data quality or usability affected?

Comments:

The data quality and/or usability was 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 matrix spike (MS) sample associated with preparation batch 320-597225 had a recovery failure for perfluorobutanesulfonic acid (PFBS). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to Section 6.c for further assessment.

The "I" qualifier means the transition mass ratio for the indicated analyte was above/below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. The following sample/analyte pairs were qualified "I" due to the transition mass ratio QC failures.

- Samples *22SCC-SS-3*, *22SCC-SS-4*, *22SCC-SS-5*, *22SCC-SS-6*, *22SCC-SS-8*, *22SCC-SS-14*, *22SCC-SS-15*, *22SCC-SS-16*, *22SCC-SS-17*, *22SCC-SS-18*, *22SCC-SS-19*, *22SCC-SS-20*, *22SCC-SS-120*, *22SCC-SS-23*, *22SCC-SS-27*, *22SCC-SS-29*, *22SCC-SS-30*, and *22SCC-SS-31* had a transition mass ratio QC failure for perfluorooctanesulfonic acid (PFOS).

These sample/analyte pairs are considered estimated, biased high, and are flagged "JH*" in the analytical summary tables, unless qualified due to other quality control failures.

Results for samples *22SCC-SS-125* and *22SCC-SS-12* 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. Sample results are not considered affected.

The sample duplicate (DUP) precision for sample *22SCC-SS-8* was outside control limits. Sample non-homogeneity and matrix are suspected. Sample was wet muddy sand and medium sized rocks. The relative percent difference (RPD) for solids is within acceptable limits.

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

See above.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Yes; see above.

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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:

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 and/or usability was not affected; see above.

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:

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:

See above.

v. Data quality or usability affected?

Comments:

The data quality and/or usability was not 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:

LCS samples were reported for PFAS analysis.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

Metals/inorganics were not reported for 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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v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A; percent recoveries and RPDs were within laboratory acceptance criteria.

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:

The data quality and/or usability was not affected; see above.

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 PFAS analysis.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

Metals/inorganics were not reported for 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:

The MS associated with preparation batch 320-597225 had a high recovery failure for PFBS. The parent sample *22SCC-SS-22* did not have a detection for this analyte. The sample result is not affected by the high MS recovery failure.

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:

N/A; 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:

The data quality and/or usability was not affected; 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:

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:

IDA recoveries were within laboratory acceptance criteria.

iv. Data quality or usability affected?

Comments:

The data quality and/or usability was not affected; see above.

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CS Site Name:

Deadhorse Airport DOT&PF PFAS

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:

PFAS are not volatile compounds. A trip blank is not required for the requested analysis.

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 is not required for the requested analysis.

iii. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☒ Comments:

A trip blank is not required for the requested analysis.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; a trip blank is not required for the requested analysis.

v. Data quality or usability affected?

Comments:

The data quality and/or usability was not affected; see above.

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:

Sample *22SCC-SS-110* is a field duplicate of sample *22SCC-SS-10*.
Sample *22SCC-SS-120* is a field duplicate of sample *22SCC-SS-20*.
Sample *22SCC-SS-125* is a field duplicate of sample *22SCC-SS-25*.

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iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = 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 field duplicate RPDs were within the project-specified data quality objective of 50%, where calculable, with the following exceptions.

The field duplicate pair *22SCC-SS-10* / *22SCC-SS-110* had RPD failures for PFHxS and PFOS. The sample results are considered estimated, no direction of bias, and are flagged 'J*' in the analytical summary tables to identify the laboratory imprecision, unless previously qualified.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Yes; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☐ No☐ N/A☒ Comments:

Samples were not collected with reusable sampling equipment. A decontamination blank/ equipment blank sample are not required for this project.

i. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☒ Comments:

A decontamination blank/ equipment blank sample are not required for this project.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A; a decontamination blank/ equipment blank sample are not required for this project.

iii. Data quality or usability affected?

Comments:

The data quality and/or usability was not affected; see above.

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Laboratory Report Date:

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CS Site Name:

Deadhorse Airport DOT&PF PFAS

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

Refer to Section 4.b for additional qualifiers due to transition mass ratio failures.

APPENDIX C: SGS LABORATORY REPORT AND LDRC

Appendix C

SGS Laboratory Report and LDRC

CONTENTS

SGS North America, Inc Work Order 1223040

Laboratory Data Review Checklist for SGS Work Order 1223040

Laboratory Report of Analysis

1223040

106427-001 Deadhorse Airport

Stephen C. Ede
2022.07.12
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t f

Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**
SGS Project: **1223040**
Project Name/Site: **106427-001 Deadhorse Airport**
Project Contact: **Michael Jaramillo**

Refer to sample receipt form for information on sample condition.

22SCC-SS-22 (1223040004) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-4 (1223040011) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-23 (1223040020) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-24 (1223040024) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-20 (1223040026) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-120 (1223040027) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

22SCC-SS-15 (1223040028) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.

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

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
8270D SIM (PAH)				
1223040006	22SCC-SS-18	XMS13217	Phenanthrene	BLC
1223040014	22SCC-SS-14	XMS13216	Benzo[b]Fluoranthene	BLC
1671520	CVC for HBN 1839189 [XMS/13211	XMS13211	Benzo[k]fluoranthene	RP

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.

Print Date: 07/12/2022 4:04:44PM

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, indenmification 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 05/31/2022 for Nitrate as N by SM 4500NO3-F) & 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 SGS QAP and, when applicable, other regulatory authorities.

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.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
22SCC-SS-16	1223040001	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-6	1223040002	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-1	1223040003	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-22	1223040004	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-21	1223040005	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-18	1223040006	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-17	1223040007	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-5	1223040008	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-2	1223040009	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-3	1223040010	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-4	1223040011	06/08/2022	06/14/2022	Soil/Solid (dry weight)
Trip Blank 1	1223040012	06/08/2022	06/14/2022	Soil/Solid (dry weight)
Trip Blank 2	1223040013	06/08/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-14	1223040014	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-110	1223040015	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-13	1223040016	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-12	1223040017	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-9	1223040018	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-11	1223040019	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-23	1223040020	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-7	1223040021	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-8	1223040022	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-10	1223040023	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-24	1223040024	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-19	1223040025	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-20	1223040026	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-120	1223040027	06/09/2022	06/14/2022	Soil/Solid (dry weight)
22SCC-SS-15	1223040028	06/09/2022	06/14/2022	Soil/Solid (dry weight)

Method	Method Description
AK102	Diesel Range Organics (S)
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
SW8260D	Volatile Organic Compounds (S) FIELD EXT
SM21 2540G	Percent Solids SM2540G
AK101	Gasoline Range Organics (S)

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Detectable Results Summary

Client Sample ID: **22SCC-SS-16**
Lab Sample ID: 1223040001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Benzo[g,h,i]perylene	0.0537J	mg/kg
	Chrysene	0.209	mg/kg
	Pyrene	0.0456J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	277	mg/kg
Volatile Fuels	Gasoline Range Organics	1.14J	mg/kg

Client Sample ID: **22SCC-SS-6**
Lab Sample ID: 1223040002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	23.8	mg/kg
Volatile Fuels	Gasoline Range Organics	1.05J	mg/kg

Client Sample ID: **22SCC-SS-1**
Lab Sample ID: 1223040003

	Parameter	Result	Units
Volatile Fuels	Gasoline Range Organics	1.90J	mg/kg

Client Sample ID: **22SCC-SS-22**
Lab Sample ID: 1223040004

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	84.2	mg/kg
Volatile Fuels	Gasoline Range Organics	1.08J	mg/kg

Client Sample ID: **22SCC-SS-21**
Lab Sample ID: 1223040005

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	13.7J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.07J	mg/kg

Client Sample ID: **22SCC-SS-18**
Lab Sample ID: 1223040006

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Benzo[a]pyrene	0.00803J	mg/kg
	Benzo[b]Fluoranthene	0.0112J	mg/kg
	Chrysene	0.00965J	mg/kg
	Fluoranthene	0.0177J	mg/kg
	Phenanthrene	0.0138J	mg/kg
	Pyrene	0.0153J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	11.7J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.766J	mg/kg

Client Sample ID: **22SCC-SS-17**
Lab Sample ID: 1223040007

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Fluoranthene	0.00796J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	17.1J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.97J	mg/kg

Client Sample ID: **22SCC-SS-5**
Lab Sample ID: 1223040008

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	20.3J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.02J	mg/kg

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Detectable Results Summary

	Parameter	Result	Units
Client Sample ID: **22SCC-SS-2**			
Lab Sample ID: 1223040009			
Volatile Fuels	Gasoline Range Organics	1.94J	mg/kg
Client Sample ID: **22SCC-SS-3**			
Lab Sample ID: 1223040010			
Semivolatile Organic Fuels	Diesel Range Organics	22.0J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.876J	mg/kg
Client Sample ID: **22SCC-SS-4**			
Lab Sample ID: 1223040011			
Semivolatile Organic Fuels	Diesel Range Organics	37.2	mg/kg
Volatile Fuels	Gasoline Range Organics	1.02J	mg/kg
Client Sample ID: **Trip Blank 1**			
Lab Sample ID: 1223040012			
Volatile Fuels	Gasoline Range Organics	1.02J	mg/kg
Client Sample ID: **Trip Blank 2**			
Lab Sample ID: 1223040013			
Volatile Fuels	Gasoline Range Organics	1.32J	mg/kg
Client Sample ID: **22SCC-SS-14**			
Lab Sample ID: 1223040014			
Polynuclear Aromatics GC/MS	Fluoranthene	0.0236J	mg/kg
	Pyrene	0.0202J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	13.2J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.17J	mg/kg
Client Sample ID: **22SCC-SS-110**			
Lab Sample ID: 1223040015			
Semivolatile Organic Fuels	Diesel Range Organics	20.0J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.866J	mg/kg
Client Sample ID: **22SCC-SS-13**			
Lab Sample ID: 1223040016			
Volatile Fuels	Gasoline Range Organics	1.65J	mg/kg
Client Sample ID: **22SCC-SS-12**			
Lab Sample ID: 1223040017			
Polynuclear Aromatics GC/MS	Chrysene	0.00855J	mg/kg
	Pyrene	0.0237J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	20.8J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.919J	mg/kg

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Detectable Results Summary

Client Sample ID: **22SCC-SS-9**
Lab Sample ID: 1223040018

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.00862J	mg/kg
	2-Methylnaphthalene	0.0120J	mg/kg
	Chrysene	0.0107J	mg/kg
	Naphthalene	0.00872J	mg/kg
	Phenanthrene	0.00740J	mg/kg
	Pyrene	0.00798J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	36.1	mg/kg
Volatile Fuels	Gasoline Range Organics	1.80J	mg/kg
Volatile GC/MS	Benzene	0.0247	mg/kg
	Ethylbenzene	0.0111J	mg/kg
	P & M -Xylene	0.0348J	mg/kg
	Xylenes (total)	0.0348J	mg/kg

Client Sample ID: **22SCC-SS-11**
Lab Sample ID: 1223040019

	Parameter	Result	Units
Volatile Fuels	Gasoline Range Organics	0.977J	mg/kg

Client Sample ID: **22SCC-SS-23**
Lab Sample ID: 1223040020

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	75.8	mg/kg
Volatile Fuels	Gasoline Range Organics	1.17J	mg/kg

Client Sample ID: **22SCC-SS-7**
Lab Sample ID: 1223040021

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	16.3J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.865J	mg/kg

Client Sample ID: **22SCC-SS-8**
Lab Sample ID: 1223040022

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	17.3J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.756J	mg/kg

Client Sample ID: **22SCC-SS-10**
Lab Sample ID: 1223040023

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Benzo[b]Fluoranthene	0.00809J	mg/kg
	Chrysene	0.00855J	mg/kg
	Fluoranthene	0.0100J	mg/kg
	Phenanthrene	0.00931J	mg/kg
	Pyrene	0.0120J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	22.6J	mg/kg
Volatile Fuels	Gasoline Range Organics	0.905J	mg/kg

Client Sample ID: **22SCC-SS-24**
Lab Sample ID: 1223040024

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	53.4	mg/kg
Volatile Fuels	Gasoline Range Organics	1.09J	mg/kg

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Detectable Results Summary

Client Sample ID: **22SCC-SS-19**
Lab Sample ID: 1223040025

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	17.3J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.23J	mg/kg

Client Sample ID: **22SCC-SS-20**
Lab Sample ID: 1223040026

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Chrysene	0.0680J	mg/kg
	Phenanthrene	0.0385J	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	68.6	mg/kg
Volatile Fuels	Gasoline Range Organics	1.92J	mg/kg

Client Sample ID: **22SCC-SS-120**
Lab Sample ID: 1223040027

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	80.5	mg/kg
Volatile Fuels	Gasoline Range Organics	3.00J	mg/kg

Client Sample ID: **22SCC-SS-15**
Lab Sample ID: 1223040028

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	40.9	mg/kg
Volatile Fuels	Gasoline Range Organics	1.29J	mg/kg

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Results of **22SCC-SS-16**

Client Sample ID: **22SCC-SS-16**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040001
Lab Project ID: 1223040

Collection Date: 06/09/22 06:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.1
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
2-Methylnaphthalene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Acenaphthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Acenaphthylene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Benzo(a)Anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Benzo[a]pyrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Benzo[b]Fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Benzo[g,h,i]perylene	0.0537	J	0.137	0.0342	mg/kg	5		07/06/22 17:34
Benzo[k]fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Chrysene	0.209		0.137	0.0342	mg/kg	5		07/06/22 17:34
Dibenzo[a,h]anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Fluorene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Indeno[1,2,3-c,d] pyrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Naphthalene	0.0545	U	0.109	0.0274	mg/kg	5		07/06/22 17:34
Phenanthrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 17:34
Pyrene	0.0456	J	0.137	0.0342	mg/kg	5		07/06/22 17:34
Surrogates								
2-Methylnaphthalene-d10 (surr)	79.7		58-103		%	5		07/06/22 17:34
Fluoranthene-d10 (surr)	93.1		54-113		%	5		07/06/22 17:34

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 17:34
Container ID: 1223040001-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.812 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-16**

Client Sample ID: **22SCC-SS-16**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040001
Lab Project ID: 1223040

Collection Date: 06/09/22 06:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	277		22.1	9.96	mg/kg	1		06/25/22 03:27
Surrogates								
5a Androstane (surr)	99.1		50-150		%	1		06/25/22 03:27

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 03:27
Container ID: 1223040001-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.083 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-16**

Client Sample ID: **22SCC-SS-16**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040001
Lab Project ID: 1223040

Collection Date: 06/09/22 06:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.1
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.14	J	2.99	0.897	mg/kg	1		06/26/22 23:35
Surrogates								
4-Bromofluorobenzene (surr)	69.3		50-150		%	1		06/26/22 23:35

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/26/22 23:35
Container ID: 1223040001-B

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/09/22 06:55
Prep Initial Wt./Vol.: 56.834 g
Prep Extract Vol: 30.6133 mL

Results of **22SCC-SS-16**

Client Sample ID: **22SCC-SS-16**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040001
Lab Project ID: 1223040

Collection Date: 06/09/22 06:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.1
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00745	U	0.0149	0.00466	mg/kg	1		06/17/22 05:30
Ethylbenzene	0.0150	U	0.0299	0.00932	mg/kg	1		06/17/22 05:30
o-Xylene	0.0150	U	0.0299	0.00932	mg/kg	1		06/17/22 05:30
P & M -Xylene	0.0299	U	0.0598	0.0179	mg/kg	1		06/17/22 05:30
Toluene	0.0150	U	0.0299	0.00932	mg/kg	1		06/17/22 05:30
Xylenes (total)	0.0449	U	0.0897	0.0273	mg/kg	1		06/17/22 05:30
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.1		71-136		%	1		06/17/22 05:30
4-Bromofluorobenzene (surr)	66.1		55-151		%	1		06/17/22 05:30
Toluene-d8 (surr)	97.6		85-116		%	1		06/17/22 05:30

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 05:30
Container ID: 1223040001-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 06:55
Prep Initial Wt./Vol.: 56.834 g
Prep Extract Vol: 30.6133 mL

Results of **22SCC-SS-6**

Client Sample ID: **22SCC-SS-6**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040002
Lab Project ID: 1223040

Collection Date: 06/08/22 15:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.5
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	0.00732	mg/kg	1		07/03/22 19:37
2-Methylnaphthalene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Acenaphthene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Acenaphthylene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Anthracene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Benzo(a)Anthracene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Benzo[a]pyrene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Benzo[b]Fluoranthene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Benzo[g,h,i]perylene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Benzo[k]fluoranthene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Chrysene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Dibenzo[a,h]anthracene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Fluoranthene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Fluorene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Indeno[1,2,3-c,d] pyrene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Naphthalene	0.0117	U	0.0234	0.00585	mg/kg	1		07/03/22 19:37
Phenanthrene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Pyrene	0.0147	U	0.0293	0.00732	mg/kg	1		07/03/22 19:37
Surrogates								
2-Methylnaphthalene-d10 (surr)	63.3		58-103		%	1		07/03/22 19:37
Fluoranthene-d10 (surr)	68.9		54-113		%	1		07/03/22 19:37

Batch Information

Analytical Batch: XMS13209
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/03/22 19:37
Container ID: 1223040002-A

Prep Batch: XXX46446
Prep Method: SW3550C
Prep Date/Time: 06/21/22 08:10
Prep Initial Wt./Vol.: 22.742 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-6**

Client Sample ID: **22SCC-SS-6**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040002
Lab Project ID: 1223040

Collection Date: 06/08/22 15:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	23.8		23.1	10.4	mg/kg	1		06/22/22 20:47
Surrogates								
5a Androstane (surr)	75.5		50-150		%	1		06/22/22 20:47

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 20:47
Container ID: 1223040002-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.694 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-6**

Client Sample ID: **22SCC-SS-6**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040002
Lab Project ID: 1223040

Collection Date: 06/08/22 15:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.05	J	2.60	0.781	mg/kg	1		06/27/22 00:12
Surrogates								
4-Bromofluorobenzene (surr)	116		50-150		%	1		06/27/22 00:12

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 00:12
Container ID: 1223040002-B

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/08/22 15:00
Prep Initial Wt./Vol.: 87.573 g
Prep Extract Vol: 38.5473 mL

Results of **22SCC-SS-6**

Client Sample ID: **22SCC-SS-6**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040002
Lab Project ID: 1223040

Collection Date: 06/08/22 15:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.5
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00650	U	0.0130	0.00406	mg/kg	1		06/17/22 05:46
Ethylbenzene	0.0130	U	0.0260	0.00812	mg/kg	1		06/17/22 05:46
o-Xylene	0.0130	U	0.0260	0.00812	mg/kg	1		06/17/22 05:46
P & M -Xylene	0.0261	U	0.0521	0.0156	mg/kg	1		06/17/22 05:46
Toluene	0.0130	U	0.0260	0.00812	mg/kg	1		06/17/22 05:46
Xylenes (total)	0.0391	U	0.0781	0.0237	mg/kg	1		06/17/22 05:46
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		71-136		%	1		06/17/22 05:46
4-Bromofluorobenzene (surr)	108		55-151		%	1		06/17/22 05:46
Toluene-d8 (surr)	97.6		85-116		%	1		06/17/22 05:46

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 05:46
Container ID: 1223040002-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 15:00
Prep Initial Wt./Vol.: 87.573 g
Prep Extract Vol: 38.5473 mL

Results of **22SCC-SS-1**

Client Sample ID: **22SCC-SS-1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040003
Lab Project ID: 1223040

Collection Date: 06/08/22 13:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
2-Methylnaphthalene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Acenaphthene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Acenaphthylene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Anthracene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Benzo(a)Anthracene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Benzo[a]pyrene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Benzo[b]Fluoranthene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Benzo[g,h,i]perylene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Benzo[k]fluoranthene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Chrysene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Dibenzo[a,h]anthracene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Fluoranthene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Fluorene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Indeno[1,2,3-c,d] pyrene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Naphthalene	0.0112	U	0.0223	0.00557	mg/kg	1		07/06/22 11:33
Phenanthrene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Pyrene	0.0139	U	0.0279	0.00696	mg/kg	1		07/06/22 11:33
Surrogates								
2-Methylnaphthalene-d10 (surr)	86.6		58-103		%	1		07/06/22 11:33
Fluoranthene-d10 (surr)	91		54-113		%	1		07/06/22 11:33

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 11:33
Container ID: 1223040003-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.645 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-1**

Client Sample ID: **22SCC-SS-1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040003
Lab Project ID: 1223040

Collection Date: 06/08/22 13:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.1	U	22.2	9.98	mg/kg	1		06/22/22 20:57
Surrogates								
5a Androstane (surr)	83.9		50-150		%	1		06/22/22 20:57

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 20:57
Container ID: 1223040003-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.35 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-1**

Client Sample ID: **22SCC-SS-1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040003
Lab Project ID: 1223040

Collection Date: 06/08/22 13:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.90	J	4.62	1.39	mg/kg	1		06/27/22 00:30
Surrogates								
4-Bromofluorobenzene (surr)	91.2		50-150		%	1		06/27/22 00:30

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 00:30
Container ID: 1223040003-B

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/08/22 13:40
Prep Initial Wt./Vol.: 34.914 g
Prep Extract Vol: 28.7821 mL

Results of **22SCC-SS-1**

Client Sample ID: **22SCC-SS-1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040003
Lab Project ID: 1223040

Collection Date: 06/08/22 13:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0116	U	0.0231	0.00721	mg/kg	1		06/17/22 06:02
Ethylbenzene	0.0231	U	0.0462	0.0144	mg/kg	1		06/17/22 06:02
o-Xylene	0.0231	U	0.0462	0.0144	mg/kg	1		06/17/22 06:02
P & M -Xylene	0.0462	U	0.0925	0.0277	mg/kg	1		06/17/22 06:02
Toluene	0.0231	U	0.0462	0.0144	mg/kg	1		06/17/22 06:02
Xylenes (total)	0.0695	U	0.139	0.0422	mg/kg	1		06/17/22 06:02
Surrogates								
1,2-Dichloroethane-D4 (surr)	109		71-136		%	1		06/17/22 06:02
4-Bromofluorobenzene (surr)	85.5		55-151		%	1		06/17/22 06:02
Toluene-d8 (surr)	96.7		85-116		%	1		06/17/22 06:02

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 06:02
Container ID: 1223040003-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 13:40
Prep Initial Wt./Vol.: 34.914 g
Prep Extract Vol: 28.7821 mL

Results of **22SCC-SS-22**

Client Sample ID: **22SCC-SS-22**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040004
Lab Project ID: 1223040

Collection Date: 06/09/22 08:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):94.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
2-Methylnaphthalene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Acenaphthene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Acenaphthylene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Anthracene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Benzo(a)Anthracene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Benzo[a]pyrene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Benzo[b]Fluoranthene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Benzo[g,h,i]perylene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Benzo[k]fluoranthene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Chrysene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Dibenzo[a,h]anthracene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Fluoranthene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Fluorene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Indeno[1,2,3-c,d] pyrene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Naphthalene	0.0520	U	0.104	0.0260	mg/kg	5		07/06/22 17:54
Phenanthrene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Pyrene	0.0650	U	0.130	0.0324	mg/kg	5		07/06/22 17:54
Surrogates								
2-Methylnaphthalene-d10 (surr)	85.2		58-103		%	5		07/06/22 17:54
Fluoranthene-d10 (surr)	95.5		54-113		%	5		07/06/22 17:54

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 17:54
Container ID: 1223040004-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.883 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-22**

Client Sample ID: **22SCC-SS-22**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040004
Lab Project ID: 1223040

Collection Date: 06/09/22 08:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):94.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	84.2		20.9	9.40	mg/kg	1		06/25/22 01:35
Surrogates								
5a Androstane (surr)	96.2		50-150		%	1		06/25/22 01:35

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 01:35
Container ID: 1223040004-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.334 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-22**

Client Sample ID: **22SCC-SS-22**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040004
Lab Project ID: 1223040

Collection Date: 06/09/22 08:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):94.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.08	J	2.54	0.761	mg/kg	1		06/27/22 00:48
Surrogates								
4-Bromofluorobenzene (surr)	94.5		50-150		%	1		06/27/22 00:48

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 00:48
Container ID: 1223040004-B

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:15
Prep Initial Wt./Vol.: 58.47 g
Prep Extract Vol: 28.1029 mL

Results of **22SCC-SS-22**

Client Sample ID: **22SCC-SS-22**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040004
Lab Project ID: 1223040

Collection Date: 06/09/22 08:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):94.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00635	U	0.0127	0.00396	mg/kg	1		06/17/22 06:17
Ethylbenzene	0.0127	U	0.0254	0.00792	mg/kg	1		06/17/22 06:17
o-Xylene	0.0127	U	0.0254	0.00792	mg/kg	1		06/17/22 06:17
P & M -Xylene	0.0254	U	0.0508	0.0152	mg/kg	1		06/17/22 06:17
Toluene	0.0127	U	0.0254	0.00792	mg/kg	1		06/17/22 06:17
Xylenes (total)	0.0381	U	0.0761	0.0231	mg/kg	1		06/17/22 06:17
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		71-136		%	1		06/17/22 06:17
4-Bromofluorobenzene (surr)	87.9		55-151		%	1		06/17/22 06:17
Toluene-d8 (surr)	98.4		85-116		%	1		06/17/22 06:17

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 06:17
Container ID: 1223040004-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:15
Prep Initial Wt./Vol.: 58.47 g
Prep Extract Vol: 28.1029 mL

Results of **22SCC-SS-21**

Client Sample ID: **22SCC-SS-21**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040005
Lab Project ID: 1223040

Collection Date: 06/09/22 08:05
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
2-Methylnaphthalene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Acenaphthene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Acenaphthylene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Anthracene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Benzo(a)Anthracene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Benzo[a]pyrene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Benzo[b]Fluoranthene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Benzo[g,h,i]perylene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Benzo[k]fluoranthene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Chrysene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Dibenzo[a,h]anthracene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Fluoranthene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Fluorene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Indeno[1,2,3-c,d] pyrene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Naphthalene	0.0106	U	0.0211	0.00527	mg/kg	1		07/06/22 11:53
Phenanthrene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Pyrene	0.0132	U	0.0264	0.00659	mg/kg	1		07/06/22 11:53
Surrogates								
2-Methylnaphthalene-d10 (surr)	84.3		58-103		%	1		07/06/22 11:53
Fluoranthene-d10 (surr)	89.6		54-113		%	1		07/06/22 11:53

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 11:53
Container ID: 1223040005-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.781 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-21**

Client Sample ID: **22SCC-SS-21**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040005
Lab Project ID: 1223040

Collection Date: 06/09/22 08:05
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	13.7	J	21.1	9.48	mg/kg	1		06/25/22 01:45
Surrogates								
5a Androstane (surr)	88.6		50-150		%	1		06/25/22 01:45

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 01:45
Container ID: 1223040005-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.403 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-21**

Client Sample ID: **22SCC-SS-21**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040005
Lab Project ID: 1223040

Collection Date: 06/09/22 08:05
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.07	J	2.54	0.763	mg/kg	1		06/27/22 02:00
Surrogates								
4-Bromofluorobenzene (surr)	96.5		50-150		%	1		06/27/22 02:00

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 02:00
Container ID: 1223040005-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:05
Prep Initial Wt./Vol.: 60.478 g
Prep Extract Vol: 28.8161 mL

Results of **22SCC-SS-21**

Client Sample ID: **22SCC-SS-21**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040005
Lab Project ID: 1223040

Collection Date: 06/09/22 08:05
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00635	U	0.0127	0.00397	mg/kg	1		06/17/22 06:33
Ethylbenzene	0.0127	U	0.0254	0.00793	mg/kg	1		06/17/22 06:33
o-Xylene	0.0127	U	0.0254	0.00793	mg/kg	1		06/17/22 06:33
P & M -Xylene	0.0255	U	0.0509	0.0153	mg/kg	1		06/17/22 06:33
Toluene	0.0127	U	0.0254	0.00793	mg/kg	1		06/17/22 06:33
Xylenes (total)	0.0381	U	0.0763	0.0232	mg/kg	1		06/17/22 06:33
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.4		71-136		%	1		06/17/22 06:33
4-Bromofluorobenzene (surr)	90.2		55-151		%	1		06/17/22 06:33
Toluene-d8 (surr)	98		85-116		%	1		06/17/22 06:33

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 06:33
Container ID: 1223040005-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:05
Prep Initial Wt./Vol.: 60.478 g
Prep Extract Vol: 28.8161 mL

Results of **22SCC-SS-18**

Client Sample ID: **22SCC-SS-18**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040006
Lab Project ID: 1223040

Collection Date: 06/09/22 07:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.5
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
2-Methylnaphthalene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Acenaphthene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Acenaphthylene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Anthracene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Benzo(a)Anthracene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Benzo[a]pyrene	0.00803	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Benzo[b]Fluoranthene	0.0112	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Benzo[g,h,i]perylene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Benzo[k]fluoranthene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Chrysene	0.00965	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Dibenzo[a,h]anthracene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Fluoranthene	0.0177	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Fluorene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Indeno[1,2,3-c,d] pyrene	0.0132	U	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Naphthalene	0.0106	U	0.0211	0.00529	mg/kg	1		07/06/22 12:14
Phenanthrene	0.0138	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Pyrene	0.0153	J	0.0264	0.00661	mg/kg	1		07/06/22 12:14
Surrogates								
2-Methylnaphthalene-d10 (surr)	77.6		58-103		%	1		07/06/22 12:14
Fluoranthene-d10 (surr)	81.4		54-113		%	1		07/06/22 12:14

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 12:14
Container ID: 1223040006-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.778 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-18**

Client Sample ID: **22SCC-SS-18**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040006
Lab Project ID: 1223040

Collection Date: 06/09/22 07:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.7	J	21.1	9.49	mg/kg	1		06/25/22 01:55
Surrogates								
5a Androstane (surr)	85		50-150		%	1		06/25/22 01:55

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 01:55
Container ID: 1223040006-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.459 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-18**

Client Sample ID: **22SCC-SS-18**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040006
Lab Project ID: 1223040

Collection Date: 06/09/22 07:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.766	J	1.93	0.578	mg/kg	1		06/27/22 02:18
Surrogates								
4-Bromofluorobenzene (surr)	93.8		50-150		%	1		06/27/22 02:18

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 02:18
Container ID: 1223040006-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 07:40
Prep Initial Wt./Vol.: 84.905 g
Prep Extract Vol: 30.5595 mL

Results of **22SCC-SS-18**

Client Sample ID: **22SCC-SS-18**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040006
Lab Project ID: 1223040

Collection Date: 06/09/22 07:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):93.5
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00482	U	0.00963	0.00300	mg/kg	1		06/17/22 06:48
Ethylbenzene	0.00965	U	0.0193	0.00601	mg/kg	1		06/17/22 06:48
o-Xylene	0.00965	U	0.0193	0.00601	mg/kg	1		06/17/22 06:48
P & M -Xylene	0.0193	U	0.0385	0.0116	mg/kg	1		06/17/22 06:48
Toluene	0.00965	U	0.0193	0.00601	mg/kg	1		06/17/22 06:48
Xylenes (total)	0.0289	U	0.0578	0.0176	mg/kg	1		06/17/22 06:48
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		71-136		%	1		06/17/22 06:48
4-Bromofluorobenzene (surr)	82.9		55-151		%	1		06/17/22 06:48
Toluene-d8 (surr)	96.9		85-116		%	1		06/17/22 06:48

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 06:48
Container ID: 1223040006-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 07:40
Prep Initial Wt./Vol.: 84.905 g
Prep Extract Vol: 30.5595 mL

Results of **22SCC-SS-17**

Client Sample ID: **22SCC-SS-17**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040007
Lab Project ID: 1223040

Collection Date: 06/09/22 07:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):87.1
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
2-Methylnaphthalene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Acenaphthene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Acenaphthylene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Anthracene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Benzo(a)Anthracene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Benzo[a]pyrene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Benzo[b]Fluoranthene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Benzo[g,h,i]perylene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Benzo[k]fluoranthene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Chrysene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Dibenzo[a,h]anthracene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Fluoranthene	0.00796	J	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Fluorene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Indeno[1,2,3-c,d] pyrene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Naphthalene	0.0113	U	0.0226	0.00564	mg/kg	1		07/06/22 12:34
Phenanthrene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Pyrene	0.0141	U	0.0282	0.00705	mg/kg	1		07/06/22 12:34
Surrogates								
2-Methylnaphthalene-d10 (surr)	82.3		58-103		%	1		07/06/22 12:34
Fluoranthene-d10 (surr)	85.3		54-113		%	1		07/06/22 12:34

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 12:34
Container ID: 1223040007-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.906 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-17**

Client Sample ID: **22SCC-SS-17**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040007
Lab Project ID: 1223040

Collection Date: 06/09/22 07:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):87.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17.1	J	22.9	10.3	mg/kg	1		06/25/22 02:05
Surrogates								
5a Androstane (surr)	86.1		50-150		%	1		06/25/22 02:05

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 02:05
Container ID: 1223040007-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.125 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-17**

Client Sample ID: **22SCC-SS-17**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040007
Lab Project ID: 1223040

Collection Date: 06/09/22 07:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):87.1
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.97	J	4.85	1.45	mg/kg	1		06/27/22 02:37
Surrogates								
4-Bromofluorobenzene (surr)	88.2		50-150		%	1		06/27/22 02:37

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 02:37
Container ID: 1223040007-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 07:30
Prep Initial Wt./Vol.: 34.979 g
Prep Extract Vol: 29.521 mL

Results of **22SCC-SS-17**

Client Sample ID: **22SCC-SS-17**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040007
Lab Project ID: 1223040

Collection Date: 06/09/22 07:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):87.1
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0121	U	0.0242	0.00756	mg/kg	1		06/17/22 07:04
Ethylbenzene	0.0243	U	0.0485	0.0151	mg/kg	1		06/17/22 07:04
o-Xylene	0.0243	U	0.0485	0.0151	mg/kg	1		06/17/22 07:04
P & M -Xylene	0.0485	U	0.0969	0.0291	mg/kg	1		06/17/22 07:04
Toluene	0.0243	U	0.0485	0.0151	mg/kg	1		06/17/22 07:04
Xylenes (total)	0.0725	U	0.145	0.0442	mg/kg	1		06/17/22 07:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		71-136		%	1		06/17/22 07:04
4-Bromofluorobenzene (surr)	81.4		55-151		%	1		06/17/22 07:04
Toluene-d8 (surr)	96.8		85-116		%	1		06/17/22 07:04

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 07:04
Container ID: 1223040007-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 07:30
Prep Initial Wt./Vol.: 34.979 g
Prep Extract Vol: 29.521 mL

Results of **22SCC-SS-5**

Client Sample ID: **22SCC-SS-5**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040008
Lab Project ID: 1223040

Collection Date: 06/08/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
2-Methylnaphthalene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Acenaphthene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Acenaphthylene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Anthracene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Benzo(a)Anthracene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Benzo[a]pyrene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Benzo[b]Fluoranthene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Benzo[g,h,i]perylene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Benzo[k]fluoranthene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Chrysene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Dibenzo[a,h]anthracene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Fluoranthene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Fluorene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Indeno[1,2,3-c,d] pyrene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Naphthalene	0.0111	U	0.0221	0.00551	mg/kg	1		07/06/22 12:55
Phenanthrene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Pyrene	0.0138	U	0.0276	0.00689	mg/kg	1		07/06/22 12:55
Surrogates								
2-Methylnaphthalene-d10 (surr)	86.4		58-103		%	1		07/06/22 12:55
Fluoranthene-d10 (surr)	90.5		54-113		%	1		07/06/22 12:55

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 12:55
Container ID: 1223040008-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.918 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-5**

Client Sample ID: **22SCC-SS-5**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040008
Lab Project ID: 1223040

Collection Date: 06/08/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	20.3	J	22.3	10.0	mg/kg	1		06/22/22 21:07
Surrogates								
5a Androstane (surr)	96.3		50-150		%	1		06/22/22 21:07

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 21:07
Container ID: 1223040008-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.274 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-5**

Client Sample ID: **22SCC-SS-5**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040008
Lab Project ID: 1223040

Collection Date: 06/08/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.02	J	2.57	0.770	mg/kg	1		06/27/22 02:55
Surrogates								
4-Bromofluorobenzene (surr)	93		50-150		%	1		06/27/22 02:55

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 02:55
Container ID: 1223040008-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:50
Prep Initial Wt./Vol.: 72.008 g
Prep Extract Vol: 32.8974 mL

Results of **22SCC-SS-5**

Client Sample ID: **22SCC-SS-5**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040008
Lab Project ID: 1223040

Collection Date: 06/08/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00640	U	0.0128	0.00400	mg/kg	1		06/17/22 07:20
Ethylbenzene	0.0129	U	0.0257	0.00800	mg/kg	1		06/17/22 07:20
o-Xylene	0.0129	U	0.0257	0.00800	mg/kg	1		06/17/22 07:20
P & M -Xylene	0.0256	U	0.0513	0.0154	mg/kg	1		06/17/22 07:20
Toluene	0.0129	U	0.0257	0.00800	mg/kg	1		06/17/22 07:20
Xylenes (total)	0.0385	U	0.0770	0.0234	mg/kg	1		06/17/22 07:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	115		71-136		%	1		06/17/22 07:20
4-Bromofluorobenzene (surr)	94.4		55-151		%	1		06/17/22 07:20
Toluene-d8 (surr)	95.1		85-116		%	1		06/17/22 07:20

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 07:20
Container ID: 1223040008-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:50
Prep Initial Wt./Vol.: 72.008 g
Prep Extract Vol: 32.8974 mL

Results of **22SCC-SS-2**

Client Sample ID: **22SCC-SS-2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040009
Lab Project ID: 1223040

Collection Date: 06/08/22 13:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
2-Methylnaphthalene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Acenaphthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Acenaphthylene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Benzo(a)Anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Benzo[a]pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Benzo[b]Fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Benzo[g,h,i]perylene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Benzo[k]fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Chrysene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Dibenzo[a,h]anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Fluorene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Indeno[1,2,3-c,d] pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Naphthalene	0.0109	U	0.0218	0.00544	mg/kg	1		07/06/22 13:16
Phenanthrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/06/22 13:16
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.9		58-103		%	1		07/06/22 13:16
Fluoranthene-d10 (surr)	87		54-113		%	1		07/06/22 13:16

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 13:16
Container ID: 1223040009-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.909 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-2**

Client Sample ID: **22SCC-SS-2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040009
Lab Project ID: 1223040

Collection Date: 06/08/22 13:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.1	U	22.2	9.97	mg/kg	1		06/22/22 21:17
Surrogates								
5a Androstane (surr)	85.5		50-150		%	1		06/22/22 21:17

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 21:17
Container ID: 1223040009-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.03 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-2**

Client Sample ID: **22SCC-SS-2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040009
Lab Project ID: 1223040

Collection Date: 06/08/22 13:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.94	J	6.03	1.81	mg/kg	1		06/27/22 03:13
Surrogates								
4-Bromofluorobenzene (surr)	78.2		50-150		%	1		06/27/22 03:13

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 03:13
Container ID: 1223040009-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/08/22 13:50
Prep Initial Wt./Vol.: 25.263 g
Prep Extract Vol: 27.4772 mL

Results of **22SCC-SS-2**

Client Sample ID: **22SCC-SS-2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040009
Lab Project ID: 1223040

Collection Date: 06/08/22 13:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0151	U	0.0301	0.00941	mg/kg	1		06/17/22 07:35
Ethylbenzene	0.0302	U	0.0603	0.0188	mg/kg	1		06/17/22 07:35
o-Xylene	0.0302	U	0.0603	0.0188	mg/kg	1		06/17/22 07:35
P & M -Xylene	0.0605	U	0.121	0.0362	mg/kg	1		06/17/22 07:35
Toluene	0.0302	U	0.0603	0.0188	mg/kg	1		06/17/22 07:35
Xylenes (total)	0.0905	U	0.181	0.0550	mg/kg	1		06/17/22 07:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	114		71-136		%	1		06/17/22 07:35
4-Bromofluorobenzene (surr)	78.2		55-151		%	1		06/17/22 07:35
Toluene-d8 (surr)	95.6		85-116		%	1		06/17/22 07:35

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 07:35
Container ID: 1223040009-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 13:50
Prep Initial Wt./Vol.: 25.263 g
Prep Extract Vol: 27.4772 mL

Results of **22SCC-SS-3**

Client Sample ID: **22SCC-SS-3**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040010
Lab Project ID: 1223040

Collection Date: 06/08/22 14:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
2-Methylnaphthalene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Acenaphthene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Acenaphthylene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Anthracene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Benzo(a)Anthracene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Benzo[a]pyrene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Benzo[b]Fluoranthene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Benzo[g,h,i]perylene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Benzo[k]fluoranthene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Chrysene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Dibenzo[a,h]anthracene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Fluoranthene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Fluorene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Indeno[1,2,3-c,d] pyrene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Naphthalene	0.0113	U	0.0225	0.00563	mg/kg	1		07/06/22 13:36
Phenanthrene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Pyrene	0.0141	U	0.0282	0.00704	mg/kg	1		07/06/22 13:36
Surrogates								
2-Methylnaphthalene-d10 (surr)	89.5		58-103		%	1		07/06/22 13:36
Fluoranthene-d10 (surr)	93.7		54-113		%	1		07/06/22 13:36

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 13:36
Container ID: 1223040010-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.653 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-3**

Client Sample ID: **22SCC-SS-3**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040010
Lab Project ID: 1223040

Collection Date: 06/08/22 14:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	22.0	J	22.3	10.1	mg/kg	1		06/22/22 21:27
Surrogates								
5a Androstane (surr)	95.6		50-150		%	1		06/22/22 21:27

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 21:27
Container ID: 1223040010-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.465 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-3**

Client Sample ID: **22SCC-SS-3**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040010
Lab Project ID: 1223040

Collection Date: 06/08/22 14:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.876	J	2.82	0.847	mg/kg	1		06/27/22 03:31
Surrogates								
4-Bromofluorobenzene (surr)	89.3		50-150		%	1		06/27/22 03:31

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 03:31
Container ID: 1223040010-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:15
Prep Initial Wt./Vol.: 65.882 g
Prep Extract Vol: 32.7922 mL

Results of **22SCC-SS-3**

Client Sample ID: **22SCC-SS-3**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040010
Lab Project ID: 1223040

Collection Date: 06/08/22 14:15
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00705	U	0.0141	0.00440	mg/kg	1		06/17/22 07:51
Ethylbenzene	0.0141	U	0.0282	0.00881	mg/kg	1		06/17/22 07:51
o-Xylene	0.0141	U	0.0282	0.00881	mg/kg	1		06/17/22 07:51
P & M -Xylene	0.0283	U	0.0565	0.0169	mg/kg	1		06/17/22 07:51
Toluene	0.0141	U	0.0282	0.00881	mg/kg	1		06/17/22 07:51
Xylenes (total)	0.0424	U	0.0847	0.0257	mg/kg	1		06/17/22 07:51
Surrogates								
1,2-Dichloroethane-D4 (surr)	113		71-136		%	1		06/17/22 07:51
4-Bromofluorobenzene (surr)	86.3		55-151		%	1		06/17/22 07:51
Toluene-d8 (surr)	96.5		85-116		%	1		06/17/22 07:51

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 07:51
Container ID: 1223040010-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:15
Prep Initial Wt./Vol.: 65.882 g
Prep Extract Vol: 32.7922 mL

Results of **22SCC-SS-4**

Client Sample ID: **22SCC-SS-4**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040011
Lab Project ID: 1223040

Collection Date: 06/08/22 14:25
Received Date: 06/14/22 07:59
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	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
2-Methylnaphthalene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Acenaphthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Acenaphthylene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Benzo(a)Anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Benzo[a]pyrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Benzo[b]Fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Benzo[g,h,i]perylene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Benzo[k]fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Chrysene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Dibenzo[a,h]anthracene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Fluoranthene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Fluorene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Indeno[1,2,3-c,d] pyrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Naphthalene	0.0545	U	0.109	0.0273	mg/kg	5		07/06/22 18:15
Phenanthrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Pyrene	0.0685	U	0.137	0.0342	mg/kg	5		07/06/22 18:15
Surrogates								
2-Methylnaphthalene-d10 (surr)	85.5		58-103		%	5		07/06/22 18:15
Fluoranthene-d10 (surr)	94.9		54-113		%	5		07/06/22 18:15

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 18:15
Container ID: 1223040011-A

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 06/22/22 09:33
Prep Initial Wt./Vol.: 22.626 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-4**

Client Sample ID: **22SCC-SS-4**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040011
Lab Project ID: 1223040

Collection Date: 06/08/22 14:25
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):91.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	37.2		21.9	9.86	mg/kg	1		06/22/22 21:38
Surrogates								
5a Androstane (surr)	94.6		50-150		%	1		06/22/22 21:38

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/22/22 21:38
Container ID: 1223040011-A

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 06/21/22 13:48
Prep Initial Wt./Vol.: 30.098 g
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **22SCC-SS-4**

Client Sample ID: **22SCC-SS-4**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040011
Lab Project ID: 1223040

Collection Date: 06/08/22 14:25
Received Date: 06/14/22 07:59
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	1.02	J	2.60	0.779	mg/kg	1		06/27/22 03:49
Surrogates								
4-Bromofluorobenzene (surr)	91.6		50-150		%	1		06/27/22 03:49

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 03:49
Container ID: 1223040011-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:25
Prep Initial Wt./Vol.: 65.417 g
Prep Extract Vol: 30.8983 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-4**

Client Sample ID: **22SCC-SS-4**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040011
Lab Project ID: 1223040

Collection Date: 06/08/22 14:25
Received Date: 06/14/22 07:59
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	0.00650	U	0.0130	0.00405	mg/kg	1		06/17/22 08:07
Ethylbenzene	0.0130	U	0.0260	0.00810	mg/kg	1		06/17/22 08:07
o-Xylene	0.0130	U	0.0260	0.00810	mg/kg	1		06/17/22 08:07
P & M -Xylene	0.0260	U	0.0519	0.0156	mg/kg	1		06/17/22 08:07
Toluene	0.0130	U	0.0260	0.00810	mg/kg	1		06/17/22 08:07
Xylenes (total)	0.0390	U	0.0779	0.0237	mg/kg	1		06/17/22 08:07
Surrogates								
1,2-Dichloroethane-D4 (surr)	107		71-136		%	1		06/17/22 08:07
4-Bromofluorobenzene (surr)	88.5		55-151		%	1		06/17/22 08:07
Toluene-d8 (surr)	97.6		85-116		%	1		06/17/22 08:07

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 08:07
Container ID: 1223040011-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 14:25
Prep Initial Wt./Vol.: 65.417 g
Prep Extract Vol: 30.8983 mL

Results of **Trip Blank 1**

Client Sample ID: **Trip Blank 1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040012
Lab Project ID: 1223040

Collection Date: 06/08/22 12:00
Received Date: 06/14/22 07:59
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	1.02	J	2.56	0.768	mg/kg	1		06/26/22 18:46
Surrogates								
4-Bromofluorobenzene (surr)	77.7		50-150		%	1		06/26/22 18:46

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/26/22 18:46
Container ID: 1223040012-A

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/08/22 12:00
Prep Initial Wt./Vol.: 48.83 g
Prep Extract Vol: 25 mL

Results of **Trip Blank 1**

Client Sample ID: **Trip Blank 1**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040012
Lab Project ID: 1223040

Collection Date: 06/08/22 12:00
Received Date: 06/14/22 07:59
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	0.00640	U	0.0128	0.00399	mg/kg	1		06/17/22 03:25
Ethylbenzene	0.0128	U	0.0256	0.00799	mg/kg	1		06/17/22 03:25
o-Xylene	0.0128	U	0.0256	0.00799	mg/kg	1		06/17/22 03:25
P & M -Xylene	0.0256	U	0.0512	0.0154	mg/kg	1		06/17/22 03:25
Toluene	0.0128	U	0.0256	0.00799	mg/kg	1		06/17/22 03:25
Xylenes (total)	0.0384	U	0.0768	0.0233	mg/kg	1		06/17/22 03:25
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.6		71-136		%	1		06/17/22 03:25
4-Bromofluorobenzene (surr)	88.5		55-151		%	1		06/17/22 03:25
Toluene-d8 (surr)	97.3		85-116		%	1		06/17/22 03:25

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 03:25
Container ID: 1223040012-A

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 12:00
Prep Initial Wt./Vol.: 48.83 g
Prep Extract Vol: 25 mL

Results of **Trip Blank 2**

Client Sample ID: **Trip Blank 2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040013
Lab Project ID: 1223040

Collection Date: 06/08/22 12:05
Received Date: 06/14/22 07:59
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	1.32	J	2.58	0.775	mg/kg	1		06/26/22 19:04
Surrogates								
4-Bromofluorobenzene (surr)	93.9		50-150		%	1		06/26/22 19:04

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/26/22 19:04
Container ID: 1223040013-A

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 06/08/22 12:05
Prep Initial Wt./Vol.: 48.397 g
Prep Extract Vol: 25 mL

Results of **Trip Blank 2**

Client Sample ID: **Trip Blank 2**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040013
Lab Project ID: 1223040

Collection Date: 06/08/22 12:05
Received Date: 06/14/22 07:59
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	0.00645	U	0.0129	0.00403	mg/kg	1		06/17/22 03:41
Ethylbenzene	0.0129	U	0.0258	0.00806	mg/kg	1		06/17/22 03:41
o-Xylene	0.0129	U	0.0258	0.00806	mg/kg	1		06/17/22 03:41
P & M -Xylene	0.0259	U	0.0517	0.0155	mg/kg	1		06/17/22 03:41
Toluene	0.0129	U	0.0258	0.00806	mg/kg	1		06/17/22 03:41
Xylenes (total)	0.0388	U	0.0775	0.0236	mg/kg	1		06/17/22 03:41
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		71-136		%	1		06/17/22 03:41
4-Bromofluorobenzene (surr)	87.2		55-151		%	1		06/17/22 03:41
Toluene-d8 (surr)	98.1		85-116		%	1		06/17/22 03:41

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 03:41
Container ID: 1223040013-A

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/08/22 12:05
Prep Initial Wt./Vol.: 48.397 g
Prep Extract Vol: 25 mL

Results of **22SCC-SS-14**

Client Sample ID: **22SCC-SS-14**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040014
Lab Project ID: 1223040

Collection Date: 06/09/22 16:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
2-Methylnaphthalene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Acenaphthene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Acenaphthylene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Anthracene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Benzo(a)Anthracene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Benzo[a]pyrene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Benzo[b]Fluoranthene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Benzo[g,h,i]perylene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Benzo[k]fluoranthene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Chrysene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Dibenzo[a,h]anthracene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Fluoranthene	0.0236	J	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Fluorene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Indeno[1,2,3-c,d] pyrene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Naphthalene	0.0108	U	0.0216	0.00539	mg/kg	1		07/05/22 19:25
Phenanthrene	0.0135	U	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Pyrene	0.0202	J	0.0270	0.00674	mg/kg	1		07/05/22 19:25
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.5		58-103		%	1		07/05/22 19:25
Fluoranthene-d10 (surr)	85.1		54-113		%	1		07/05/22 19:25

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 19:25
Container ID: 1223040014-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.963 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-14**

Client Sample ID: **22SCC-SS-14**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040014
Lab Project ID: 1223040

Collection Date: 06/09/22 16:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	13.2	J	22.0	9.89	mg/kg	1		06/28/22 19:32
Surrogates								
5a Androstane (surr)	98.6		50-150		%	1		06/28/22 19:32

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 19:32
Container ID: 1223040014-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.037 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-14**

Client Sample ID: **22SCC-SS-14**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040014
Lab Project ID: 1223040

Collection Date: 06/09/22 16:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.17	J	3.29	0.988	mg/kg	1		06/27/22 04:07
Surrogates								
4-Bromofluorobenzene (surr)	76.4		50-150		%	1		06/27/22 04:07

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 04:07
Container ID: 1223040014-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 16:00
Prep Initial Wt./Vol.: 49.263 g
Prep Extract Vol: 29.4878 mL

Results of **22SCC-SS-14**

Client Sample ID: **22SCC-SS-14**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040014
Lab Project ID: 1223040

Collection Date: 06/09/22 16:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00825	U	0.0165	0.00514	mg/kg	1		06/17/22 08:22
Ethylbenzene	0.0164	U	0.0329	0.0103	mg/kg	1		06/17/22 08:22
o-Xylene	0.0164	U	0.0329	0.0103	mg/kg	1		06/17/22 08:22
P & M -Xylene	0.0330	U	0.0659	0.0198	mg/kg	1		06/17/22 08:22
Toluene	0.0164	U	0.0329	0.0103	mg/kg	1		06/17/22 08:22
Xylenes (total)	0.0494	U	0.0988	0.0300	mg/kg	1		06/17/22 08:22
Surrogates								
1,2-Dichloroethane-D4 (surr)	115		71-136		%	1		06/17/22 08:22
4-Bromofluorobenzene (surr)	70.5		55-151		%	1		06/17/22 08:22
Toluene-d8 (surr)	97.5		85-116		%	1		06/17/22 08:22

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 08:22
Container ID: 1223040014-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 16:00
Prep Initial Wt./Vol.: 49.263 g
Prep Extract Vol: 29.4878 mL

Results of **22SCC-SS-110**

Client Sample ID: **22SCC-SS-110**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040015
Lab Project ID: 1223040

Collection Date: 06/09/22 14:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
2-Methylnaphthalene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Acenaphthene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Acenaphthylene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Anthracene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Benzo(a)Anthracene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Benzo[a]pyrene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Benzo[b]Fluoranthene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Benzo[g,h,i]perylene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Benzo[k]fluoranthene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Chrysene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Dibenzo[a,h]anthracene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Fluoranthene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Fluorene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Indeno[1,2,3-c,d] pyrene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Naphthalene	0.0111	U	0.0221	0.00553	mg/kg	1		07/05/22 19:45
Phenanthrene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Pyrene	0.0138	U	0.0276	0.00691	mg/kg	1		07/05/22 19:45
Surrogates								
2-Methylnaphthalene-d10 (surr)	83.5		58-103		%	1		07/05/22 19:45
Fluoranthene-d10 (surr)	88.1		54-113		%	1		07/05/22 19:45

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 19:45
Container ID: 1223040015-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.901 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-110**

Client Sample ID: **22SCC-SS-110**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040015
Lab Project ID: 1223040

Collection Date: 06/09/22 14:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	20.0	J	22.2	9.99	mg/kg	1		06/28/22 19:42
Surrogates								
5a Androstane (surr)	110		50-150		%	1		06/28/22 19:42

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 19:42
Container ID: 1223040015-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.41 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-110**

Client Sample ID: **22SCC-SS-110**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040015
Lab Project ID: 1223040

Collection Date: 06/09/22 14:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.866	J	2.49	0.746	mg/kg	1		06/27/22 04:25
Surrogates								
4-Bromofluorobenzene (surr)	76.2		50-150		%	1		06/27/22 04:25

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 04:25
Container ID: 1223040015-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:40
Prep Initial Wt./Vol.: 75.551 g
Prep Extract Vol: 33.3892 mL

Results of **22SCC-SS-110**

Client Sample ID: **22SCC-SS-110**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040015
Lab Project ID: 1223040

Collection Date: 06/09/22 14:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.9
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00620	U	0.0124	0.00388	mg/kg	1		06/17/22 08:37
Ethylbenzene	0.0124	U	0.0249	0.00776	mg/kg	1		06/17/22 08:37
o-Xylene	0.0124	U	0.0249	0.00776	mg/kg	1		06/17/22 08:37
P & M -Xylene	0.0249	U	0.0497	0.0149	mg/kg	1		06/17/22 08:37
Toluene	0.0124	U	0.0249	0.00776	mg/kg	1		06/17/22 08:37
Xylenes (total)	0.0373	U	0.0746	0.0227	mg/kg	1		06/17/22 08:37
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		71-136		%	1		06/17/22 08:37
4-Bromofluorobenzene (surr)	72.1		55-151		%	1		06/17/22 08:37
Toluene-d8 (surr)	98.1		85-116		%	1		06/17/22 08:37

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 08:37
Container ID: 1223040015-B

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:40
Prep Initial Wt./Vol.: 75.551 g
Prep Extract Vol: 33.3892 mL

Results of **22SCC-SS-13**

Client Sample ID: **22SCC-SS-13**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040016
Lab Project ID: 1223040

Collection Date: 06/09/22 15:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.9
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	0.00717	mg/kg	1		07/05/22 20:06
2-Methylnaphthalene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Acenaphthene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Acenaphthylene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Anthracene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Benzo(a)Anthracene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Benzo[a]pyrene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Benzo[b]Fluoranthene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Benzo[g,h,i]perylene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Benzo[k]fluoranthene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Chrysene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Dibenzo[a,h]anthracene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Fluoranthene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Fluorene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Indeno[1,2,3-c,d] pyrene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Naphthalene	0.0115	U	0.0229	0.00573	mg/kg	1		07/05/22 20:06
Phenanthrene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Pyrene	0.0144	U	0.0287	0.00717	mg/kg	1		07/05/22 20:06
Surrogates								
2-Methylnaphthalene-d10 (surr)	83.1		58-103		%	1		07/05/22 20:06
Fluoranthene-d10 (surr)	85.8		54-113		%	1		07/05/22 20:06

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 20:06
Container ID: 1223040016-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.581 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-13**

Client Sample ID: **22SCC-SS-13**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040016
Lab Project ID: 1223040

Collection Date: 06/09/22 15:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.5	U	23.0	10.3	mg/kg	1		06/28/22 19:53
Surrogates								
5a Androstane (surr)	112		50-150		%	1		06/28/22 19:53

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 19:53
Container ID: 1223040016-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.058 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-13**

Client Sample ID: **22SCC-SS-13**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040016
Lab Project ID: 1223040

Collection Date: 06/09/22 15:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.65	J	3.98	1.19	mg/kg	1		06/27/22 04:43
Surrogates								
4-Bromofluorobenzene (surr)	99.8		50-150		%	1		06/27/22 04:43

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 04:43
Container ID: 1223040016-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:55
Prep Initial Wt./Vol.: 44.676 g
Prep Extract Vol: 30.8652 mL

Results of **22SCC-SS-13**

Client Sample ID: **22SCC-SS-13**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040016
Lab Project ID: 1223040

Collection Date: 06/09/22 15:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.9
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00995	U	0.0199	0.00620	mg/kg	1		06/17/22 17:08
Ethylbenzene	0.0199	U	0.0398	0.0124	mg/kg	1		06/17/22 17:08
o-Xylene	0.0199	U	0.0398	0.0124	mg/kg	1		06/17/22 17:08
P & M -Xylene	0.0398	U	0.0795	0.0239	mg/kg	1		06/17/22 17:08
Toluene	0.0199	U	0.0398	0.0124	mg/kg	1		06/17/22 17:08
Xylenes (total)	0.0595	U	0.119	0.0363	mg/kg	1		06/17/22 17:08
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.6		71-136		%	1		06/17/22 17:08
4-Bromofluorobenzene (surr)	92.7		55-151		%	1		06/17/22 17:08
Toluene-d8 (surr)	97.7		85-116		%	1		06/17/22 17:08

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 17:08
Container ID: 1223040016-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:55
Prep Initial Wt./Vol.: 44.676 g
Prep Extract Vol: 30.8652 mL

Results of **22SCC-SS-12**

Client Sample ID: **22SCC-SS-12**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040017
Lab Project ID: 1223040

Collection Date: 06/09/22 15:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.5
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
2-Methylnaphthalene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Acenaphthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Acenaphthylene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Benzo(a)Anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Benzo[a]pyrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Benzo[b]Fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Benzo[g,h,i]perylene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Benzo[k]fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Chrysene	0.00855	J	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Dibenzo[a,h]anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Fluorene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Indeno[1,2,3-c,d] pyrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Naphthalene	0.0111	U	0.0222	0.00556	mg/kg	1		07/05/22 20:26
Phenanthrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Pyrene	0.0237	J	0.0278	0.00695	mg/kg	1		07/05/22 20:26
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.6		58-103		%	1		07/05/22 20:26
Fluoranthene-d10 (surr)	83.9		54-113		%	1		07/05/22 20:26

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 20:26
Container ID: 1223040017-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.591 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-12**

Client Sample ID: **22SCC-SS-12**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040017
Lab Project ID: 1223040

Collection Date: 06/09/22 15:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	20.8	J	21.9	9.88	mg/kg	1		06/28/22 20:03
Surrogates								
5a Androstane (surr)	104		50-150		%	1		06/28/22 20:03

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:03
Container ID: 1223040017-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.534 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-12**

Client Sample ID: **22SCC-SS-12**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040017
Lab Project ID: 1223040

Collection Date: 06/09/22 15:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.919	J	2.34	0.702	mg/kg	1		06/27/22 05:01
Surrogates								
4-Bromofluorobenzene (surr)	96		50-150		%	1		06/27/22 05:01

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 05:01
Container ID: 1223040017-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:40
Prep Initial Wt./Vol.: 79.58 g
Prep Extract Vol: 33.3331 mL

Results of **22SCC-SS-12**

Client Sample ID: **22SCC-SS-12**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040017
Lab Project ID: 1223040

Collection Date: 06/09/22 15:40
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.5
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00585	U	0.0117	0.00365	mg/kg	1		06/17/22 20:33
Ethylbenzene	0.0117	U	0.0234	0.00730	mg/kg	1		06/17/22 20:33
o-Xylene	0.0117	U	0.0234	0.00730	mg/kg	1		06/17/22 20:33
P & M -Xylene	0.0234	U	0.0468	0.0140	mg/kg	1		06/17/22 20:33
Toluene	0.0117	U	0.0234	0.00730	mg/kg	1		06/17/22 20:33
Xylenes (total)	0.0351	U	0.0702	0.0213	mg/kg	1		06/17/22 20:33
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		71-136		%	1		06/17/22 20:33
4-Bromofluorobenzene (surr)	87.5		55-151		%	1		06/17/22 20:33
Toluene-d8 (surr)	96.1		85-116		%	1		06/17/22 20:33

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 20:33
Container ID: 1223040017-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:40
Prep Initial Wt./Vol.: 79.58 g
Prep Extract Vol: 33.3331 mL

Results of **22SCC-SS-9**

Client Sample ID: **22SCC-SS-9**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040018
Lab Project ID: 1223040

Collection Date: 06/09/22 14:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.6
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00862	J	0.0288	0.00719	mg/kg	1		07/05/22 20:47
2-Methylnaphthalene	0.0120	J	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Acenaphthene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Acenaphthylene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Anthracene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Benzo(a)Anthracene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Benzo[a]pyrene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Benzo[b]Fluoranthene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Benzo[g,h,i]perylene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Benzo[k]fluoranthene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Chrysene	0.0107	J	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Dibenzo[a,h]anthracene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Fluoranthene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Fluorene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Indeno[1,2,3-c,d] pyrene	0.0144	U	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Naphthalene	0.00872	J	0.0230	0.00575	mg/kg	1		07/05/22 20:47
Phenanthrene	0.00740	J	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Pyrene	0.00798	J	0.0288	0.00719	mg/kg	1		07/05/22 20:47
Surrogates								
2-Methylnaphthalene-d10 (surr)	83.7		58-103		%	1		07/05/22 20:47
Fluoranthene-d10 (surr)	83.5		54-113		%	1		07/05/22 20:47

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 20:47
Container ID: 1223040018-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.57 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-9**

Client Sample ID: **22SCC-SS-9**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040018
Lab Project ID: 1223040

Collection Date: 06/09/22 14:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.6
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	36.1		22.8	10.3	mg/kg	1		06/25/22 02:15
Surrogates								
5a Androstane (surr)	92		50-150		%	1		06/25/22 02:15

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 02:15
Container ID: 1223040018-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.394 g
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **22SCC-SS-9**

Client Sample ID: **22SCC-SS-9**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040018
Lab Project ID: 1223040

Collection Date: 06/09/22 14:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.6
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.80	J	3.08	0.923	mg/kg	1		06/27/22 05:19
Surrogates								
4-Bromofluorobenzene (surr)	96.5		50-150		%	1		06/27/22 05:19

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 05:19
Container ID: 1223040018-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:35
Prep Initial Wt./Vol.: 62.607 g
Prep Extract Vol: 33.3704 mL

Results of **22SCC-SS-9**

Client Sample ID: **22SCC-SS-9**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040018
Lab Project ID: 1223040

Collection Date: 06/09/22 14:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.6
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0247		0.0154	0.00480	mg/kg	1		06/17/22 20:48
Ethylbenzene	0.0111	J	0.0308	0.00960	mg/kg	1		06/17/22 20:48
o-Xylene	0.0154	U	0.0308	0.00960	mg/kg	1		06/17/22 20:48
P & M -Xylene	0.0348	J	0.0615	0.0185	mg/kg	1		06/17/22 20:48
Toluene	0.0154	U	0.0308	0.00960	mg/kg	1		06/17/22 20:48
Xylenes (total)	0.0348	J	0.0923	0.0281	mg/kg	1		06/17/22 20:48
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		71-136		%	1		06/17/22 20:48
4-Bromofluorobenzene (surr)	84.4		55-151		%	1		06/17/22 20:48
Toluene-d8 (surr)	97		85-116		%	1		06/17/22 20:48

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 20:48
Container ID: 1223040018-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:35
Prep Initial Wt./Vol.: 62.607 g
Prep Extract Vol: 33.3704 mL

Results of **22SCC-SS-11**

Client Sample ID: **22SCC-SS-11**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040019
Lab Project ID: 1223040

Collection Date: 06/09/22 15:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.6
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
2-Methylnaphthalene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Acenaphthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Acenaphthylene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Benzo(a)Anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Benzo[a]pyrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Benzo[b]Fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Benzo[g,h,i]perylene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Benzo[k]fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Chrysene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Dibenzo[a,h]anthracene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Fluoranthene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Fluorene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Indeno[1,2,3-c,d] pyrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Naphthalene	0.0111	U	0.0222	0.00556	mg/kg	1		07/05/22 21:07
Phenanthrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Pyrene	0.0139	U	0.0278	0.00695	mg/kg	1		07/05/22 21:07
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.1		58-103		%	1		07/05/22 21:07
Fluoranthene-d10 (surr)	82.4		54-113		%	1		07/05/22 21:07

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 21:07
Container ID: 1223040019-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.846 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-11**

Client Sample ID: **22SCC-SS-11**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040019
Lab Project ID: 1223040

Collection Date: 06/09/22 15:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.6
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	11.2	U	22.4	10.1	mg/kg	1		06/25/22 02:25
Surrogates								
5a Androstane (surr)	87.1		50-150		%	1		06/25/22 02:25

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 02:25
Container ID: 1223040019-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.273 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-11**

Client Sample ID: **22SCC-SS-11**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040019
Lab Project ID: 1223040

Collection Date: 06/09/22 15:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.6
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.977	J	2.52	0.757	mg/kg	1		06/27/22 05:37
Surrogates								
4-Bromofluorobenzene (surr)	102		50-150		%	1		06/27/22 05:37

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 05:37
Container ID: 1223040019-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:30
Prep Initial Wt./Vol.: 75.081 g
Prep Extract Vol: 33.5747 mL

Results of **22SCC-SS-11**

Client Sample ID: **22SCC-SS-11**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040019
Lab Project ID: 1223040

Collection Date: 06/09/22 15:30
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):88.6
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00630	U	0.0126	0.00394	mg/kg	1		06/17/22 21:04
Ethylbenzene	0.0126	U	0.0252	0.00788	mg/kg	1		06/17/22 21:04
o-Xylene	0.0126	U	0.0252	0.00788	mg/kg	1		06/17/22 21:04
P & M -Xylene	0.0253	U	0.0505	0.0151	mg/kg	1		06/17/22 21:04
Toluene	0.0126	U	0.0252	0.00788	mg/kg	1		06/17/22 21:04
Xylenes (total)	0.0379	U	0.0757	0.0230	mg/kg	1		06/17/22 21:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.6		71-136		%	1		06/17/22 21:04
4-Bromofluorobenzene (surr)	94.1		55-151		%	1		06/17/22 21:04
Toluene-d8 (surr)	96.4		85-116		%	1		06/17/22 21:04

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 21:04
Container ID: 1223040019-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 15:30
Prep Initial Wt./Vol.: 75.081 g
Prep Extract Vol: 33.5747 mL

Results of **22SCC-SS-23**

Client Sample ID: **22SCC-SS-23**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040020
Lab Project ID: 1223040

Collection Date: 06/09/22 09:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
2-Methylnaphthalene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Acenaphthene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Acenaphthylene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Anthracene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Benzo(a)Anthracene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Benzo[a]pyrene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Benzo[b]Fluoranthene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Benzo[g,h,i]perylene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Benzo[k]fluoranthene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Chrysene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Dibenzo[a,h]anthracene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Fluoranthene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Fluorene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Indeno[1,2,3-c,d] pyrene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Naphthalene	0.0555	U	0.111	0.0277	mg/kg	5		07/06/22 00:13
Phenanthrene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Pyrene	0.0690	U	0.138	0.0346	mg/kg	5		07/06/22 00:13
Surrogates								
2-Methylnaphthalene-d10 (surr)	79.2		58-103		%	5		07/06/22 00:13
Fluoranthene-d10 (surr)	88.8		54-113		%	5		07/06/22 00:13

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 00:13
Container ID: 1223040020-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.638 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-23**

Client Sample ID: **22SCC-SS-23**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040020
Lab Project ID: 1223040

Collection Date: 06/09/22 09:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	75.8		22.0	9.91	mg/kg	1		06/25/22 02:35
Surrogates								
5a Androstane (surr)	95.1		50-150		%	1		06/25/22 02:35

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 02:35
Container ID: 1223040020-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.346 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-23**

Client Sample ID: **22SCC-SS-23**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040020
Lab Project ID: 1223040

Collection Date: 06/09/22 09:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.17	J	2.94	0.881	mg/kg	1		06/27/22 05:55
Surrogates								
4-Bromofluorobenzene (surr)	92.1		50-150		%	1		06/27/22 05:55

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 05:55
Container ID: 1223040020-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 09:45
Prep Initial Wt./Vol.: 58.737 g
Prep Extract Vol: 30.9906 mL

Results of **22SCC-SS-23**

Client Sample ID: **22SCC-SS-23**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040020
Lab Project ID: 1223040

Collection Date: 06/09/22 09:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00735	U	0.0147	0.00458	mg/kg	1		06/17/22 21:19
Ethylbenzene	0.0147	U	0.0294	0.00917	mg/kg	1		06/17/22 21:19
o-Xylene	0.0147	U	0.0294	0.00917	mg/kg	1		06/17/22 21:19
P & M -Xylene	0.0294	U	0.0588	0.0176	mg/kg	1		06/17/22 21:19
Toluene	0.0147	U	0.0294	0.00917	mg/kg	1		06/17/22 21:19
Xylenes (total)	0.0440	U	0.0881	0.0268	mg/kg	1		06/17/22 21:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.7		71-136		%	1		06/17/22 21:19
4-Bromofluorobenzene (surr)	86.3		55-151		%	1		06/17/22 21:19
Toluene-d8 (surr)	96.7		85-116		%	1		06/17/22 21:19

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 21:19
Container ID: 1223040020-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 09:45
Prep Initial Wt./Vol.: 58.737 g
Prep Extract Vol: 30.9906 mL

Results of **22SCC-SS-7**

Client Sample ID: **22SCC-SS-7**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040021
Lab Project ID: 1223040

Collection Date: 06/09/22 14:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
2-Methylnaphthalene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Acenaphthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Acenaphthylene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Benzo(a)Anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Benzo[a]pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Benzo[b]Fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Benzo[g,h,i]perylene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Benzo[k]fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Chrysene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Dibenzo[a,h]anthracene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Fluoranthene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Fluorene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Indeno[1,2,3-c,d] pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Naphthalene	0.0109	U	0.0218	0.00545	mg/kg	1		07/05/22 21:28
Phenanthrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Pyrene	0.0136	U	0.0272	0.00681	mg/kg	1		07/05/22 21:28
Surrogates								
2-Methylnaphthalene-d10 (surr)	84.1		58-103		%	1		07/05/22 21:28
Fluoranthene-d10 (surr)	87.4		54-113		%	1		07/05/22 21:28

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 21:28
Container ID: 1223040021-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.747 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-7**

Client Sample ID: **22SCC-SS-7**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040021
Lab Project ID: 1223040

Collection Date: 06/09/22 14:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	16.3	J	21.8	9.81	mg/kg	1		06/25/22 02:46
Surrogates								
5a Androstane (surr)	109		50-150		%	1		06/25/22 02:46

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/25/22 02:46
Container ID: 1223040021-A

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 06/22/22 15:31
Prep Initial Wt./Vol.: 30.336 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-7**

Client Sample ID: **22SCC-SS-7**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040021
Lab Project ID: 1223040

Collection Date: 06/09/22 14:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.865	J	2.40	0.719	mg/kg	1		06/27/22 06:32
Surrogates								
4-Bromofluorobenzene (surr)	92.5		50-150		%	1		06/27/22 06:32

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 06:32
Container ID: 1223040021-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:00
Prep Initial Wt./Vol.: 72.964 g
Prep Extract Vol: 31.7505 mL

Results of **22SCC-SS-7**

Client Sample ID: **22SCC-SS-7**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040021
Lab Project ID: 1223040

Collection Date: 06/09/22 14:00
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):90.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00600	U	0.0120	0.00374	mg/kg	1		06/17/22 21:35
Ethylbenzene	0.0120	U	0.0240	0.00748	mg/kg	1		06/17/22 21:35
o-Xylene	0.0120	U	0.0240	0.00748	mg/kg	1		06/17/22 21:35
P & M -Xylene	0.0240	U	0.0480	0.0144	mg/kg	1		06/17/22 21:35
Toluene	0.0120	U	0.0240	0.00748	mg/kg	1		06/17/22 21:35
Xylenes (total)	0.0360	U	0.0719	0.0219	mg/kg	1		06/17/22 21:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		71-136		%	1		06/17/22 21:35
4-Bromofluorobenzene (surr)	86.9		55-151		%	1		06/17/22 21:35
Toluene-d8 (surr)	97.3		85-116		%	1		06/17/22 21:35

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 21:35
Container ID: 1223040021-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:00
Prep Initial Wt./Vol.: 72.964 g
Prep Extract Vol: 31.7505 mL

Results of **22SCC-SS-8**

Client Sample ID: **22SCC-SS-8**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040022
Lab Project ID: 1223040

Collection Date: 06/09/22 14:10
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
2-Methylnaphthalene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Acenaphthene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Acenaphthylene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Anthracene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Benzo(a)Anthracene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Benzo[a]pyrene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Benzo[b]Fluoranthene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Benzo[g,h,i]perylene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Benzo[k]fluoranthene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Chrysene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Dibenzo[a,h]anthracene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Fluoranthene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Fluorene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Indeno[1,2,3-c,d] pyrene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Naphthalene	0.0111	U	0.0221	0.00552	mg/kg	1		07/05/22 22:30
Phenanthrene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Pyrene	0.0138	U	0.0276	0.00690	mg/kg	1		07/05/22 22:30
Surrogates								
2-Methylnaphthalene-d10 (surr)	82.1		58-103		%	1		07/05/22 22:30
Fluoranthene-d10 (surr)	86.4		54-113		%	1		07/05/22 22:30

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 22:30
Container ID: 1223040022-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.79 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-8**

Client Sample ID: **22SCC-SS-8**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040022
Lab Project ID: 1223040

Collection Date: 06/09/22 14:10
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17.3	J	22.2	9.98	mg/kg	1		06/28/22 20:14
Surrogates								
5a Androstane (surr)	103		50-150		%	1		06/28/22 20:14

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:14
Container ID: 1223040022-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.273 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-8**

Client Sample ID: **22SCC-SS-8**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040022
Lab Project ID: 1223040

Collection Date: 06/09/22 14:10
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.756	J	2.03	0.609	mg/kg	1		06/27/22 06:50
Surrogates								
4-Bromofluorobenzene (surr)	90.8		50-150		%	1		06/27/22 06:50

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 06:50
Container ID: 1223040022-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:10
Prep Initial Wt./Vol.: 97.308 g
Prep Extract Vol: 35.3192 mL

Results of **22SCC-SS-8**

Client Sample ID: **22SCC-SS-8**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040022
Lab Project ID: 1223040

Collection Date: 06/09/22 14:10
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.4
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00510	U	0.0102	0.00317	mg/kg	1		06/17/22 21:50
Ethylbenzene	0.0102	U	0.0203	0.00633	mg/kg	1		06/17/22 21:50
o-Xylene	0.0102	U	0.0203	0.00633	mg/kg	1		06/17/22 21:50
P & M -Xylene	0.0203	U	0.0406	0.0122	mg/kg	1		06/17/22 21:50
Toluene	0.0102	U	0.0203	0.00633	mg/kg	1		06/17/22 21:50
Xylenes (total)	0.0305	U	0.0609	0.0185	mg/kg	1		06/17/22 21:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		71-136		%	1		06/17/22 21:50
4-Bromofluorobenzene (surr)	87.1		55-151		%	1		06/17/22 21:50
Toluene-d8 (surr)	96.7		85-116		%	1		06/17/22 21:50

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 21:50
Container ID: 1223040022-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:10
Prep Initial Wt./Vol.: 97.308 g
Prep Extract Vol: 35.3192 mL

Results of **22SCC-SS-10**

Client Sample ID: **22SCC-SS-10**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040023
Lab Project ID: 1223040

Collection Date: 06/09/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.2
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		07/05/22 22:50
2-Methylnaphthalene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Acenaphthene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Acenaphthylene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Anthracene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Benzo(a)Anthracene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Benzo[a]pyrene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Benzo[b]Fluoranthene	0.00809	J	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Benzo[g,h,i]perylene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Benzo[k]fluoranthene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Chrysene	0.00855	J	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Dibenzo[a,h]anthracene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Fluoranthene	0.0100	J	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Fluorene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Indeno[1,2,3-c,d] pyrene	0.0143	U	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Naphthalene	0.0115	U	0.0229	0.00572	mg/kg	1		07/05/22 22:50
Phenanthrene	0.00931	J	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Pyrene	0.0120	J	0.0286	0.00716	mg/kg	1		07/05/22 22:50
Surrogates								
2-Methylnaphthalene-d10 (surr)	82		58-103		%	1		07/05/22 22:50
Fluoranthene-d10 (surr)	85.6		54-113		%	1		07/05/22 22:50

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 22:50
Container ID: 1223040023-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.793 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-10**

Client Sample ID: **22SCC-SS-10**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040023
Lab Project ID: 1223040

Collection Date: 06/09/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	22.6	J	23.0	10.3	mg/kg	1		06/28/22 20:24
Surrogates								
5a Androstane (surr)	105		50-150		%	1		06/28/22 20:24

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:24
Container ID: 1223040023-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.294 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-10**

Client Sample ID: **22SCC-SS-10**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040023
Lab Project ID: 1223040

Collection Date: 06/09/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.905	J	2.30	0.690	mg/kg	1		06/27/22 07:08
Surrogates								
4-Bromofluorobenzene (surr)	98.8		50-150		%	1		06/27/22 07:08

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 07:08
Container ID: 1223040023-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:50
Prep Initial Wt./Vol.: 96.535 g
Prep Extract Vol: 38.2964 mL

Results of **22SCC-SS-10**

Client Sample ID: **22SCC-SS-10**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040023
Lab Project ID: 1223040

Collection Date: 06/09/22 14:50
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):86.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00575	U	0.0115	0.00359	mg/kg	1		06/17/22 22:06
Ethylbenzene	0.0115	U	0.0230	0.00718	mg/kg	1		06/17/22 22:06
o-Xylene	0.0115	U	0.0230	0.00718	mg/kg	1		06/17/22 22:06
P & M -Xylene	0.0230	U	0.0460	0.0138	mg/kg	1		06/17/22 22:06
Toluene	0.0115	U	0.0230	0.00718	mg/kg	1		06/17/22 22:06
Xylenes (total)	0.0345	U	0.0690	0.0210	mg/kg	1		06/17/22 22:06
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		71-136		%	1		06/17/22 22:06
4-Bromofluorobenzene (surr)	89.4		55-151		%	1		06/17/22 22:06
Toluene-d8 (surr)	97.2		85-116		%	1		06/17/22 22:06

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 22:06
Container ID: 1223040023-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 14:50
Prep Initial Wt./Vol.: 96.535 g
Prep Extract Vol: 38.2964 mL

Results of **22SCC-SS-24**

Client Sample ID: **22SCC-SS-24**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040024
Lab Project ID: 1223040

Collection Date: 06/09/22 09:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):91.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
2-Methylnaphthalene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Acenaphthene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Acenaphthylene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Anthracene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Benzo(a)Anthracene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Benzo[a]pyrene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Benzo[b]Fluoranthene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Benzo[g,h,i]perylene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Benzo[k]fluoranthene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Chrysene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Dibenzo[a,h]anthracene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Fluoranthene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Fluorene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Indeno[1,2,3-c,d] pyrene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Naphthalene	0.0545	U	0.109	0.0273	mg/kg	5		07/06/22 00:33
Phenanthrene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Pyrene	0.0680	U	0.136	0.0341	mg/kg	5		07/06/22 00:33
Surrogates								
2-Methylnaphthalene-d10 (surr)	79.6		58-103		%	5		07/06/22 00:33
Fluoranthene-d10 (surr)	86.6		54-113		%	5		07/06/22 00:33

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 00:33
Container ID: 1223040024-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.613 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-24**

Client Sample ID: **22SCC-SS-24**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040024
Lab Project ID: 1223040

Collection Date: 06/09/22 09:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):91.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	53.4		21.6	9.74	mg/kg	1		06/28/22 20:35
Surrogates								
5a Androstane (surr)	103		50-150		%	1		06/28/22 20:35

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:35
Container ID: 1223040024-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.409 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-24**

Client Sample ID: **22SCC-SS-24**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040024
Lab Project ID: 1223040

Collection Date: 06/09/22 09:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):91.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.09	J	2.47	0.741	mg/kg	1		06/27/22 07:26
Surrogates								
4-Bromofluorobenzene (surr)	89.5		50-150		%	1		06/27/22 07:26

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 07:26
Container ID: 1223040024-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 09:55
Prep Initial Wt./Vol.: 68.935 g
Prep Extract Vol: 31.0677 mL

Results of **22SCC-SS-24**

Client Sample ID: **22SCC-SS-24**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040024
Lab Project ID: 1223040

Collection Date: 06/09/22 09:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):91.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00620	U	0.0124	0.00385	mg/kg	1		06/17/22 22:22
Ethylbenzene	0.0124	U	0.0247	0.00771	mg/kg	1		06/17/22 22:22
o-Xylene	0.0124	U	0.0247	0.00771	mg/kg	1		06/17/22 22:22
P & M -Xylene	0.0247	U	0.0494	0.0148	mg/kg	1		06/17/22 22:22
Toluene	0.0124	U	0.0247	0.00771	mg/kg	1		06/17/22 22:22
Xylenes (total)	0.0371	U	0.0741	0.0225	mg/kg	1		06/17/22 22:22
Surrogates								
1,2-Dichloroethane-D4 (surr)	96.4		71-136		%	1		06/17/22 22:22
4-Bromofluorobenzene (surr)	84.5		55-151		%	1		06/17/22 22:22
Toluene-d8 (surr)	97.3		85-116		%	1		06/17/22 22:22

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 22:22
Container ID: 1223040024-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 09:55
Prep Initial Wt./Vol.: 68.935 g
Prep Extract Vol: 31.0677 mL

Results of **22SCC-SS-19**

Client Sample ID: **22SCC-SS-19**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040025
Lab Project ID: 1223040

Collection Date: 06/09/22 08:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
2-Methylnaphthalene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Acenaphthene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Acenaphthylene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Anthracene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Benzo(a)Anthracene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Benzo[a]pyrene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Benzo[b]Fluoranthene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Benzo[g,h,i]perylene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Benzo[k]fluoranthene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Chrysene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Dibenzo[a,h]anthracene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Fluoranthene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Fluorene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Indeno[1,2,3-c,d] pyrene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Naphthalene	0.0110	U	0.0220	0.00550	mg/kg	1		07/05/22 23:11
Phenanthrene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Pyrene	0.0138	U	0.0275	0.00687	mg/kg	1		07/05/22 23:11
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.1		58-103		%	1		07/05/22 23:11
Fluoranthene-d10 (surr)	84.7		54-113		%	1		07/05/22 23:11

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/05/22 23:11
Container ID: 1223040025-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.996 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-19**

Client Sample ID: **22SCC-SS-19**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040025
Lab Project ID: 1223040

Collection Date: 06/09/22 08:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17.3	J	22.4	10.1	mg/kg	1		06/28/22 20:45
Surrogates								
5a Androstane (surr)	115		50-150		%	1		06/28/22 20:45

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:45
Container ID: 1223040025-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.044 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-19**

Client Sample ID: **22SCC-SS-19**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040025
Lab Project ID: 1223040

Collection Date: 06/09/22 08:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.23	J	2.91	0.873	mg/kg	1		06/27/22 07:44
Surrogates								
4-Bromofluorobenzene (surr)	97.9		50-150		%	1		06/27/22 07:44

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 07:44
Container ID: 1223040025-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:35
Prep Initial Wt./Vol.: 61.299 g
Prep Extract Vol: 31.7543 mL

Results of **22SCC-SS-19**

Client Sample ID: **22SCC-SS-19**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040025
Lab Project ID: 1223040

Collection Date: 06/09/22 08:35
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.00730	U	0.0146	0.00454	mg/kg	1		06/17/22 22:37
Ethylbenzene	0.0146	U	0.0291	0.00908	mg/kg	1		06/17/22 22:37
o-Xylene	0.0146	U	0.0291	0.00908	mg/kg	1		06/17/22 22:37
P & M -Xylene	0.0291	U	0.0582	0.0175	mg/kg	1		06/17/22 22:37
Toluene	0.0146	U	0.0291	0.00908	mg/kg	1		06/17/22 22:37
Xylenes (total)	0.0437	U	0.0873	0.0265	mg/kg	1		06/17/22 22:37
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		71-136		%	1		06/17/22 22:37
4-Bromofluorobenzene (surr)	90.4		55-151		%	1		06/17/22 22:37
Toluene-d8 (surr)	98		85-116		%	1		06/17/22 22:37

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 22:37
Container ID: 1223040025-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:35
Prep Initial Wt./Vol.: 61.299 g
Prep Extract Vol: 31.7543 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-20**

Client Sample ID: **22SCC-SS-20**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040026
Lab Project ID: 1223040

Collection Date: 06/09/22 08:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
2-Methylnaphthalene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Acenaphthene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Acenaphthylene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Anthracene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Benzo(a)Anthracene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Benzo[a]pyrene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Benzo[b]Fluoranthene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Benzo[g,h,i]perylene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Benzo[k]fluoranthene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Chrysene	0.0680	J	0.147	0.0367	mg/kg	5		07/06/22 00:54
Dibenzo[a,h]anthracene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Fluoranthene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Fluorene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Indeno[1,2,3-c,d] pyrene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Naphthalene	0.0585	U	0.117	0.0294	mg/kg	5		07/06/22 00:54
Phenanthrene	0.0385	J	0.147	0.0367	mg/kg	5		07/06/22 00:54
Pyrene	0.0735	U	0.147	0.0367	mg/kg	5		07/06/22 00:54
Surrogates								
2-Methylnaphthalene-d10 (surr)	82.3		58-103		%	5		07/06/22 00:54
Fluoranthene-d10 (surr)	92.1		54-113		%	5		07/06/22 00:54

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 00:54
Container ID: 1223040026-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.606 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-20**

Client Sample ID: **22SCC-SS-20**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040026
Lab Project ID: 1223040

Collection Date: 06/09/22 08:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	68.6		23.2	10.5	mg/kg	1		06/28/22 20:56
Surrogates								
5a Androstane (surr)	111		50-150		%	1		06/28/22 20:56

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 20:56
Container ID: 1223040026-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.464 g
Prep Extract Vol: 5 mL

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Results of **22SCC-SS-20**

Client Sample ID: **22SCC-SS-20**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040026
Lab Project ID: 1223040

Collection Date: 06/09/22 08:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.92	J	4.67	1.40	mg/kg	1		06/27/22 08:02
Surrogates								
4-Bromofluorobenzene (surr)	82.4		50-150		%	1		06/27/22 08:02

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/27/22 08:02
Container ID: 1223040026-B

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:45
Prep Initial Wt./Vol.: 39.147 g
Prep Extract Vol: 30.9709 mL

Results of **22SCC-SS-20**

Client Sample ID: **22SCC-SS-20**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040026
Lab Project ID: 1223040

Collection Date: 06/09/22 08:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):84.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0117	U	0.0233	0.00728	mg/kg	1		06/17/22 22:53
Ethylbenzene	0.0234	U	0.0467	0.0146	mg/kg	1		06/17/22 22:53
o-Xylene	0.0234	U	0.0467	0.0146	mg/kg	1		06/17/22 22:53
P & M -Xylene	0.0467	U	0.0934	0.0280	mg/kg	1		06/17/22 22:53
Toluene	0.0234	U	0.0467	0.0146	mg/kg	1		06/17/22 22:53
Xylenes (total)	0.0700	U	0.140	0.0426	mg/kg	1		06/17/22 22:53
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		71-136		%	1		06/17/22 22:53
4-Bromofluorobenzene (surr)	78.1		55-151		%	1		06/17/22 22:53
Toluene-d8 (surr)	97		85-116		%	1		06/17/22 22:53

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 22:53
Container ID: 1223040026-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:45
Prep Initial Wt./Vol.: 39.147 g
Prep Extract Vol: 30.9709 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-120**

Client Sample ID: **22SCC-SS-120**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040027
Lab Project ID: 1223040

Collection Date: 06/09/22 08:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
2-Methylnaphthalene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Acenaphthene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Acenaphthylene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Anthracene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Benzo(a)Anthracene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Benzo[a]pyrene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Benzo[b]Fluoranthene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Benzo[g,h,i]perylene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Benzo[k]fluoranthene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Chrysene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Dibenzo[a,h]anthracene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Fluoranthene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Fluorene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Indeno[1,2,3-c,d] pyrene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Naphthalene	0.0715	U	0.143	0.0358	mg/kg	5		07/06/22 01:14
Phenanthrene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Pyrene	0.0895	U	0.179	0.0448	mg/kg	5		07/06/22 01:14
Surrogates								
2-Methylnaphthalene-d10 (surr)	82		58-103		%	5		07/06/22 01:14
Fluoranthene-d10 (surr)	87.7		54-113		%	5		07/06/22 01:14

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 01:14
Container ID: 1223040027-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.683 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-120**

Client Sample ID: **22SCC-SS-120**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040027
Lab Project ID: 1223040

Collection Date: 06/09/22 08:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	80.5		28.7	12.9	mg/kg	1		06/28/22 21:06
Surrogates								
5a Androstane (surr)	106		50-150		%	1		06/28/22 21:06

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 21:06
Container ID: 1223040027-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.157 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-120**

Client Sample ID: **22SCC-SS-120**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040027
Lab Project ID: 1223040

Collection Date: 06/09/22 08:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	3.00	J	6.27	1.88	mg/kg	1		06/29/22 23:33
Surrogates								
4-Bromofluorobenzene (surr)	124		50-150		%	1		06/29/22 23:33

Batch Information

Analytical Batch: VFC16142
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/29/22 23:33
Container ID: 1223040027-B

Prep Batch: VXX38775
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:55
Prep Initial Wt./Vol.: 44.563 g
Prep Extract Vol: 38.7132 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-120**

Client Sample ID: **22SCC-SS-120**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040027
Lab Project ID: 1223040

Collection Date: 06/09/22 08:55
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):69.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.0157	U	0.0314	0.00979	mg/kg	1		06/17/22 23:08
Ethylbenzene	0.0314	U	0.0627	0.0196	mg/kg	1		06/17/22 23:08
o-Xylene	0.0314	U	0.0627	0.0196	mg/kg	1		06/17/22 23:08
P & M -Xylene	0.0625	U	0.125	0.0376	mg/kg	1		06/17/22 23:08
Toluene	0.0314	U	0.0627	0.0196	mg/kg	1		06/17/22 23:08
Xylenes (total)	0.0940	U	0.188	0.0572	mg/kg	1		06/17/22 23:08
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		71-136		%	1		06/17/22 23:08
4-Bromofluorobenzene (surr)	95.4		55-151		%	1		06/17/22 23:08
Toluene-d8 (surr)	98.5		85-116		%	1		06/17/22 23:08

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 23:08
Container ID: 1223040027-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 08:55
Prep Initial Wt./Vol.: 44.563 g
Prep Extract Vol: 38.7132 mL

Results of **22SCC-SS-15**

Client Sample ID: **22SCC-SS-15**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040028
Lab Project ID: 1223040

Collection Date: 06/09/22 06:45
Received Date: 06/14/22 07:59
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	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
2-Methylnaphthalene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Acenaphthene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Acenaphthylene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Anthracene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Benzo(a)Anthracene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Benzo[a]pyrene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Benzo[b]Fluoranthene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Benzo[g,h,i]perylene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Benzo[k]fluoranthene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Chrysene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Dibenzo[a,h]anthracene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Fluoranthene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Fluorene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Indeno[1,2,3-c,d] pyrene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Naphthalene	0.0610	U	0.122	0.0305	mg/kg	5		07/06/22 01:35
Phenanthrene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Pyrene	0.0765	U	0.153	0.0382	mg/kg	5		07/06/22 01:35
Surrogates								
2-Methylnaphthalene-d10 (surr)	82.8		58-103		%	5		07/06/22 01:35
Fluoranthene-d10 (surr)	90.1		54-113		%	5		07/06/22 01:35

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/22 01:35
Container ID: 1223040028-A

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 06/23/22 11:26
Prep Initial Wt./Vol.: 22.723 g
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 4:04:49PM

J flagging is activated

Results of **22SCC-SS-15**

Client Sample ID: **22SCC-SS-15**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040028
Lab Project ID: 1223040

Collection Date: 06/09/22 06:45
Received Date: 06/14/22 07:59
Matrix: Soil/Solid (dry weight)
Solids (%):81.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	40.9		24.7	11.1	mg/kg	1		06/28/22 21:16
Surrogates								
5a Androstane (surr)	94.6		50-150		%	1		06/28/22 21:16

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/28/22 21:16
Container ID: 1223040028-A

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 06/23/22 13:57
Prep Initial Wt./Vol.: 30.006 g
Prep Extract Vol: 5 mL

Results of **22SCC-SS-15**

Client Sample ID: **22SCC-SS-15**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040028
Lab Project ID: 1223040

Collection Date: 06/09/22 06:45
Received Date: 06/14/22 07:59
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	1.29	J	3.05	0.915	mg/kg	1		06/29/22 23:51
Surrogates								
4-Bromofluorobenzene (surr)	106		50-150		%	1		06/29/22 23:51

Batch Information

Analytical Batch: VFC16142
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/29/22 23:51
Container ID: 1223040028-B

Prep Batch: VXX38775
Prep Method: SW5035A
Prep Date/Time: 06/09/22 06:45
Prep Initial Wt./Vol.: 81.83 g
Prep Extract Vol: 40.4733 mL

Results of **22SCC-SS-15**

Client Sample ID: **22SCC-SS-15**
Client Project ID: **106427-001 Deadhorse Airport**
Lab Sample ID: 1223040028
Lab Project ID: 1223040

Collection Date: 06/09/22 06:45
Received Date: 06/14/22 07:59
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	0.00760	U	0.0152	0.00476	mg/kg	1		06/17/22 23:24
Ethylbenzene	0.0153	U	0.0305	0.00951	mg/kg	1		06/17/22 23:24
o-Xylene	0.0153	U	0.0305	0.00951	mg/kg	1		06/17/22 23:24
P & M -Xylene	0.0305	U	0.0610	0.0183	mg/kg	1		06/17/22 23:24
Toluene	0.0153	U	0.0305	0.00951	mg/kg	1		06/17/22 23:24
Xylenes (total)	0.0457	U	0.0915	0.0278	mg/kg	1		06/17/22 23:24
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.5		71-136		%	1		06/17/22 23:24
4-Bromofluorobenzene (surr)	90.9		55-151		%	1		06/17/22 23:24
Toluene-d8 (surr)	98.7		85-116		%	1		06/17/22 23:24

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/22 23:24
Container ID: 1223040028-B

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 06/09/22 06:45
Prep Initial Wt./Vol.: 81.83 g
Prep Extract Vol: 40.4733 mL

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Method Blank

Blank ID: MB for HBN 1838335 [SPT/11550]
Blank Lab ID: 1669168

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040001, 1223040002, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	99.9			%

Batch Information

Analytical Batch: SPT11550
Analytical Method: SM21 2540G
Instrument:
Analyst: ICC
Analytical Date/Time: 6/21/2022 4:42:00PM

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Duplicate Sample Summary

Original Sample ID: 1223034005
Duplicate Sample ID: 1669175

Analysis Date: 06/21/2022 16:42
Matrix: Soil/Solid (dry weight)

QC for Samples:

1223040001, 1223040002, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	99.8	92.6	%	7.50	(< 15)

Batch Information

Analytical Batch: SPT11550
Analytical Method: SM21 2540G
Instrument:
Analyst: ICC

Print Date: 07/12/2022 4:04:57PM

Method Blank

Blank ID: MB for HBN 1838432 [SPT/11551]
Blank Lab ID: 1669338

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	99.9			%

Batch Information

Analytical Batch: SPT11551
Analytical Method: SM21 2540G
Instrument:
Analyst: ICC
Analytical Date/Time: 6/22/2022 6:00:00PM

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Duplicate Sample Summary

Original Sample ID: 1223007001
Duplicate Sample ID: 1669339

Analysis Date: 06/22/2022 18:00
Matrix: Soil/Solid (dry weight)

QC for Samples:

1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	100	96.8	%	3.20	(< 15)

Batch Information

Analytical Batch: SPT11551
Analytical Method: SM21 2540G
Instrument:
Analyst: ICC

Print Date: 07/12/2022 4:05:01PM

Duplicate Sample Summary

Original Sample ID: 1223176024
Duplicate Sample ID: 1669340

Analysis Date: 06/22/2022 18:00
Matrix: Soil/Solid (dry weight)

QC for Samples:

1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	77.7	79.0	%	1.60	(< 15)

Batch Information

Analytical Batch: SPT11551
Analytical Method: SM21 2540G
Instrument:
Analyst: ICC

Print Date: 07/12/2022 4:05:01PM

Method Blank

Blank ID: MB for HBN 1838046 [VXX/38711]
Blank Lab ID: 1668535

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040001, 1223040002, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011, 1223040012, 1223040013, 1223040014, 1223040015

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
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
Surrogates				
1,2-Dichloroethane-D4 (surr)	101	71-136		%
4-Bromofluorobenzene (surr)	102	55-151		%
Toluene-d8 (surr)	98	85-116		%

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: S.S
Analytical Date/Time: 6/17/2022 1:20:00AM

Prep Batch: VXX38711
Prep Method: SW5035A
Prep Date/Time: 6/16/2022 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [VXX38711]
Blank Spike Lab ID: 1668536
Date Analyzed: 06/17/2022 01:36

Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040001, 1223040002, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011, 1223040012, 1223040013, 1223040014, 1223040015

Results by **SW8260D**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	0.750	0.792	106	(77-121)
Ethylbenzene	0.750	0.731	98	(76-122)
o-Xylene	0.750	0.746	99	(77-123)
P & M -Xylene	1.50	1.49	99	(77-124)
Toluene	0.750	0.733	98	(77-121)
Xylenes (total)	2.25	2.24	99	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	0.750		97	(71-136)
4-Bromofluorobenzene (surr)	0.750		100	(55-151)
Toluene-d8 (surr)	0.750		98	(85-116)

Batch Information

Analytical Batch: **VMS21703**
Analytical Method: **SW8260D**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **S.S**

Prep Batch: **VXX38711**
Prep Method: **SW5035A**
Prep Date/Time: **06/16/2022 06:00**
Spike Init Wt./Vol.: 0.750 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1668537
MS Sample ID: 1668538 MS
MSD Sample ID: 1668539 MSD

Analysis Date: 06/17/2022 4:28
Analysis Date: 06/17/2022 2:07
Analysis Date: 06/17/2022 2:23
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1223040001, 1223040002, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011, 1223040012, 1223040013, 1223040014, 1223040015

Results by **SW8260D**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.0135U	1.62	1.81	112	1.62	1.83	113	77-121	0.64	(< 20)
Ethylbenzene	0.0270U	1.62	1.69	104	1.62	1.68	104	76-122	0.70	(< 20)
o-Xylene	0.0270U	1.62	1.68	104	1.62	1.69	104	77-123	0.63	(< 20)
P & M -Xylene	0.0540U	3.23	3.41	105	3.23	3.39	105	77-124	0.39	(< 20)
Toluene	0.0270U	1.62	1.70	105	1.62	1.69	105	77-121	0.57	(< 20)
Xylenes (total)	0.0810U	4.85	5.08	105	4.85	5.08	105	78-124	0.06	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1.62	1.52	94	1.62	1.58	98	71-136	3.90	
4-Bromofluorobenzene (surr)		2.69	1.82	68	2.69	1.77	66	55-151	2.80	
Toluene-d8 (surr)		1.62	1.59	98	1.62	1.59	98	85-116	0.08	

Batch Information

Analytical Batch: VMS21703
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: S.S
Analytical Date/Time: 6/17/2022 2:07:00AM

Prep Batch: VXX38711
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 6/16/2022 6:00:00AM
Prep Initial Wt./Vol.: 23.20g
Prep Extract Vol: 25.00mL

Print Date: 07/12/2022 4:05:08PM

Method Blank

Blank ID: MB for HBN 1838131 [VXX/38713]
Blank Lab ID: 1668696

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
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
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	71-136		%
4-Bromofluorobenzene (surr)	103	55-151		%
Toluene-d8 (surr)	97.4	85-116		%

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: S.S
Analytical Date/Time: 6/17/2022 1:50:00PM

Prep Batch: VXX38713
Prep Method: SW5035A
Prep Date/Time: 6/17/2022 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [VXX38713]
Blank Spike Lab ID: 1668697
Date Analyzed: 06/17/2022 14:05

Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SW8260D**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	0.750	0.817	109	(77-121)
Ethylbenzene	0.750	0.756	101	(76-122)
o-Xylene	0.750	0.777	104	(77-123)
P & M -Xylene	1.50	1.56	104	(77-124)
Toluene	0.750	0.755	101	(77-121)
Xylenes (total)	2.25	2.34	104	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	0.750		98	(71-136)
4-Bromofluorobenzene (surr)	0.750		100	(55-151)
Toluene-d8 (surr)	0.750		98	(85-116)

Batch Information

Analytical Batch: **VMS21705**
Analytical Method: **SW8260D**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **S.S**

Prep Batch: **VXX38713**
Prep Method: **SW5035A**
Prep Date/Time: **06/17/2022 06:00**
Spike Init Wt./Vol.: 0.750 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1668698
MS Sample ID: 1668699 MS
MSD Sample ID: 1668700 MSD

Analysis Date: 06/17/2022 17:08
Analysis Date: 06/17/2022 15:50
Analysis Date: 06/17/2022 16:05
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **SW8260D**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.00700U	0.839	0.933	111	0.839	0.932	111	77-121	0.07	(< 20)
Ethylbenzene	0.0140U	0.839	0.861	103	0.839	0.864	103	76-122	0.36	(< 20)
o-Xylene	0.0140U	0.839	0.869	104	0.839	0.863	103	77-123	0.71	(< 20)
P & M -Xylene	0.0280U	1.68	1.76	105	1.68	1.75	104	77-124	0.64	(< 20)
Toluene	0.0140U	0.839	0.861	103	0.839	0.854	102	77-121	0.73	(< 20)
Xylenes (total)	0.0420U	2.52	2.63	104	2.52	2.61	104	78-124	0.66	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		0.839	0.815	97	0.839	0.821	98	71-136	0.70	
4-Bromofluorobenzene (surr)		1.40	1.05	75	1.40	1.04	75	55-151	0.89	
Toluene-d8 (surr)		0.839	0.816	97	0.839	0.821	98	85-116	0.60	

Batch Information

Analytical Batch: VMS21705
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: S.S
Analytical Date/Time: 6/17/2022 3:50:00PM

Prep Batch: VXX38713
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 6/17/2022 6:00:00AM
Prep Initial Wt./Vol.: 44.68g
Prep Extract Vol: 25.00mL

Print Date: 07/12/2022 4:05:12PM

Method Blank

Blank ID: MB for HBN 1838869 [VXX/38754]
Blank Lab ID: 1670078

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040001, 1223040002, 1223040003, 1223040004, 1223040012, 1223040013

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.16J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	101	50-150		%

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/26/2022 4:18:00PM

Prep Batch: VXX38754
Prep Method: SW5035A
Prep Date/Time: 6/26/2022 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [VXX38754]
Blank Spike Lab ID: 1670079
Date Analyzed: 06/26/2022 15:41

Spike Duplicate ID: LCSD for HBN 1223040 [VXX38754]
Spike Duplicate Lab ID: 1670080
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040001, 1223040002, 1223040003, 1223040004, 1223040012, 1223040013

Results by **AK101**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	12.9	103	12.5	13.2	106	(60-120)	2.90	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25		90	1.25		101	(50-150)	11.10	

Batch Information

Analytical Batch: **VFC16138**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38754**
Prep Method: **SW5035A**
Prep Date/Time: **06/26/2022 06:00**
Spike Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1838870 [VXX/38755]
Blank Lab ID: 1670081

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011, 1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.22J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	93.1	50-150		%

Batch Information

Analytical Batch: VFC16138
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/27/2022 1:42:00AM

Prep Batch: VXX38755
Prep Method: SW5035A
Prep Date/Time: 6/26/2022 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [VXX38755]
Blank Spike Lab ID: 1670082
Date Analyzed: 06/27/2022 01:06

Spike Duplicate ID: LCSD for HBN 1223040 [VXX38755]
Spike Duplicate Lab ID: 1670083
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011, 1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026

Results by **AK101**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	13.8	110	12.5	13.4	107	(60-120)	2.90	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25		95	1.25		95	(50-150)	0.06	

Batch Information

Analytical Batch: **VFC16138**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38755**
Prep Method: **SW5035A**
Prep Date/Time: **06/26/2022 06:00**
Spike Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1839054 [VXX/38775]
Blank Lab ID: 1670915

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040027, 1223040028

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.19J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	106	50-150		%

Batch Information

Analytical Batch: VFC16142
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: PHK
Analytical Date/Time: 6/29/2022 5:55:00PM

Prep Batch: VXX38775
Prep Method: SW5035A
Prep Date/Time: 6/29/2022 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [VXX38775]
Blank Spike Lab ID: 1670916
Date Analyzed: 06/29/2022 17:17

Spike Duplicate ID: LCSD for HBN 1223040 [VXX38775]
Spike Duplicate Lab ID: 1670917
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040027, 1223040028

Results by **AK101**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	14.0	112	12.5	13.8	111	(60-120)	1.10	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25		97	1.25		108	(50-150)	10.80	

Batch Information

Analytical Batch: **VFC16142**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38775**
Prep Method: **SW5035A**
Prep Date/Time: **06/29/2022 06:00**
Spike Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1838193 [XXX/46446]
Blank Lab ID: 1668937

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040002

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
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
Surrogates				
2-Methylnaphthalene-d10 (surr)	76.5	58-103		%
Fluoranthene-d10 (surr)	77.1	54-113		%

Batch Information

Analytical Batch: XMS13211
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/4/2022 7:49:00PM

Prep Batch: XXX46446
Prep Method: SW3550C
Prep Date/Time: 6/21/2022 8:10:09AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46446]
Blank Spike Lab ID: 1668938
Date Analyzed: 07/04/2022 20:09

Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040002

Results by **8270D SIM (PAH)**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0886	80	(43-111)
2-Methylnaphthalene	0.111	0.0860	77	(39-114)
Acenaphthene	0.111	0.0895	81	(44-111)
Acenaphthylene	0.111	0.0854	77	(39-116)
Anthracene	0.111	0.0901	81	(50-114)
Benzo(a)Anthracene	0.111	0.0892	80	(54-122)
Benzo[a]pyrene	0.111	0.0857	77	(50-125)
Benzo[b]Fluoranthene	0.111	0.0966	87	(53-128)
Benzo[g,h,i]perylene	0.111	0.0885	80	(49-127)
Benzo[k]fluoranthene	0.111	0.0897	81	(56-123)
Chrysene	0.111	0.0883	80	(57-118)
Dibenzo[a,h]anthracene	0.111	0.0902	81	(50-129)
Fluoranthene	0.111	0.0897	81	(55-119)
Fluorene	0.111	0.0880	79	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.0889	80	(49-130)
Naphthalene	0.111	0.0858	77	(38-111)
Phenanthrene	0.111	0.0919	83	(49-113)
Pyrene	0.111	0.0885	80	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		75	(58-103)
Fluoranthene-d10 (surr)	0.111		74	(54-113)

Batch Information

Analytical Batch: **XMS13211**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX46446**
Prep Method: **SW3550C**
Prep Date/Time: **06/21/2022 08:10**
Spike Init Wt./Vol.: 0.111 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1222923013
MS Sample ID: 1668939 MS
MSD Sample ID: 1668940 MSD

QC for Samples: 1223040002

Analysis Date: 07/03/2022 20:59
Analysis Date: 07/03/2022 21:20
Analysis Date: 07/03/2022 21:40
Matrix: Soil/Solid (dry weight)

Results by **8270D SIM (PAH)**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0135U	0.122	0.0953	78	0.120	0.0899	75	43-111	5.90	(< 20)
2-Methylnaphthalene	0.0135U	0.122	0.0959	79	0.120	0.0893	75	39-114	7.20	(< 20)
Acenaphthene	0.0135U	0.122	0.0957	79	0.120	0.0894	75	44-111	6.90	(< 20)
Acenaphthylene	0.0135U	0.122	0.0924	76	0.120	0.0868	72	39-116	6.30	(< 20)
Anthracene	0.0135U	0.122	0.0882	72	0.120	0.0818	68	50-114	7.50	(< 20)
Benzo(a)Anthracene	0.0135U	0.122	0.0917	75	0.120	0.0848	71	54-122	7.80	(< 20)
Benzo[a]pyrene	0.0135U	0.122	0.0883	73	0.120	0.0823	69	50-125	7.20	(< 20)
Benzo[b]Fluoranthene	0.0135U	0.122	0.0923	76	0.120	0.0841	70	53-128	9.30	(< 20)
Benzo[g,h,i]perylene	0.0135U	0.122	0.0822	68	0.120	0.0763	64	49-127	7.30	(< 20)
Benzo[k]fluoranthene	0.0135U	0.122	0.0937	77	0.120	0.0894	75	56-123	4.70	(< 20)
Chrysene	0.0135U	0.122	0.0945	78	0.120	0.0884	74	57-118	6.60	(< 20)
Dibenzo[a,h]anthracene	0.0135U	0.122	0.0830	68	0.120	0.0775	65	50-129	7.00	(< 20)
Fluoranthene	0.0135U	0.122	0.0978	80	0.120	0.0907	76	55-119	7.50	(< 20)
Fluorene	0.0135U	0.122	0.0936	77	0.120	0.0865	72	47-114	7.90	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0135U	0.122	0.0822	68	0.120	0.0765	64	49-130	7.20	(< 20)
Naphthalene	0.0108U	0.122	0.0935	77	0.120	0.0887	74	38-111	5.40	(< 20)
Phenanthrene	0.0135U	0.122	0.0944	78	0.120	0.0877	73	49-113	7.40	(< 20)
Pyrene	0.0135U	0.122	0.0976	80	0.120	0.0902	75	55-117	7.90	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.122	0.0888	73	0.120	0.0828	69	58-103	6.90	
Fluoranthene-d10 (surr)		0.122	0.0919	75	0.120	0.0860	72	54-113	6.60	

Batch Information

Analytical Batch: XMS13209
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/3/2022 9:20:00PM

Prep Batch: XXX46446
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 6/21/2022 8:10:09AM
Prep Initial Wt./Vol.: 22.61g
Prep Extract Vol: 5.00mL

Print Date: 07/12/2022 4:05:29PM

Method Blank

Blank ID: MB for HBN 1838217 [XXX/46450]
Blank Lab ID: 1669000

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040002, 1223040003, 1223040008, 1223040009, 1223040010, 1223040011

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	88.9	60-120		%

Batch Information

Analytical Batch: XFC16265
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MDT
Analytical Date/Time: 6/22/2022 6:12:00PM

Prep Batch: XXX46450
Prep Method: SW3550C
Prep Date/Time: 6/21/2022 1:48:02PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46450]
Blank Spike Lab ID: 1669001
Date Analyzed: 06/22/2022 18:22

Spike Duplicate ID: LCSD for HBN 1223040 [XXX46450]
Spike Duplicate Lab ID: 1669002
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040002, 1223040003, 1223040008, 1223040009, 1223040010, 1223040011

Results by **AK102**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	667	712	107	667	751	113	(75-125)	5.30	(< 20)
Surrogates									
5a Androstane (surr)	16.7		94	16.7		100	(60-120)	6.30	

Batch Information

Analytical Batch: **XFC16265**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MDT**

Prep Batch: **XXX46450**
Prep Method: **SW3550C**
Prep Date/Time: **06/21/2022 13:48**
Spike Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1838336 [XXX/46460]
Blank Lab ID: 1669176

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040001, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
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
Surrogates				
2-Methylnaphthalene-d10 (surr)	84.7	58-103		%
Fluoranthene-d10 (surr)	86.2	54-113		%

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/6/2022 10:52:00AM

Prep Batch: XXX46460
Prep Method: SW3550C
Prep Date/Time: 6/22/2022 9:33:41AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46460]
Blank Spike Lab ID: 1669177
Date Analyzed: 07/06/2022 11:12

Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040001, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011

Results by **8270D SIM (PAH)**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0945	85	(43-111)
2-Methylnaphthalene	0.111	0.0975	88	(39-114)
Acenaphthene	0.111	0.102	92	(44-111)
Acenaphthylene	0.111	0.0999	90	(39-116)
Anthracene	0.111	0.112	101	(50-114)
Benzo(a)Anthracene	0.111	0.0993	89	(54-122)
Benzo[a]pyrene	0.111	0.103	93	(50-125)
Benzo[b]Fluoranthene	0.111	0.112	101	(53-128)
Benzo[g,h,i]perylene	0.111	0.107	96	(49-127)
Benzo[k]fluoranthene	0.111	0.109	98	(56-123)
Chrysene	0.111	0.111	100	(57-118)
Dibenzo[a,h]anthracene	0.111	0.109	99	(50-129)
Fluoranthene	0.111	0.102	92	(55-119)
Fluorene	0.111	0.105	94	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.108	98	(49-130)
Naphthalene	0.111	0.0954	86	(38-111)
Phenanthrene	0.111	0.107	96	(49-113)
Pyrene	0.111	0.101	91	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		84	(58-103)
Fluoranthene-d10 (surr)	0.111		85	(54-113)

Batch Information

Analytical Batch: **XMS13217**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX46460**
Prep Method: **SW3550C**
Prep Date/Time: **06/22/2022 09:33**
Spike Init Wt./Vol.: 0.111 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1223034003
MS Sample ID: 1669178 MS
MSD Sample ID: 1669179 MSD

Analysis Date: 07/06/2022 15:30
Analysis Date: 07/06/2022 15:51
Analysis Date: 07/06/2022 16:12
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040001, 1223040003, 1223040004, 1223040005, 1223040006, 1223040007, 1223040008, 1223040009, 1223040010, 1223040011

Results by **8270D SIM (PAH)**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0740U	0.133	0.113J	85	0.130	0.110J	84	43-111	2.70	(< 20)
2-Methylnaphthalene	0.0740U	0.133	0.112J	85	0.130	0.112J	86	39-114	0.30	(< 20)
Acenaphthene	0.0740U	0.133	0.114J	86	0.130	0.111J	85	44-111	2.90	(< 20)
Acenaphthylene	0.0740U	0.133	0.115J	87	0.130	0.110J	85	39-116	4.00	(< 20)
Anthracene	0.0740U	0.133	0.115J	87	0.130	0.117J	90	50-114	2.00	(< 20)
Benzo(a)Anthracene	0.0740U	0.133	0.128J	96	0.130	0.124J	95	54-122	2.70	(< 20)
Benzo[a]pyrene	0.0740U	0.133	0.123J	93	0.130	0.123J	95	50-125	0.52	(< 20)
Benzo[b]Fluoranthene	0.0740U	0.133	0.135J	102	0.130	0.130J	100	53-128	3.80	(< 20)
Benzo[g,h,i]perylene	0.0703J	0.133	0.164	71	0.130	0.162	71	49-127	0.94	(< 20)
Benzo[k]fluoranthene	0.0740U	0.133	0.122J	92	0.130	0.123J	95	56-123	1.00	(< 20)
Chrysene	0.0740U	0.133	0.134J	101	0.130	0.130J	100	57-118	2.80	(< 20)
Dibenzo[a,h]anthracene	0.0740U	0.133	0.110J	83	0.130	0.112J	86	50-129	2.30	(< 20)
Fluoranthene	0.0558J	0.133	0.146J	68	0.130	0.143J	68	55-119	1.10	(< 20)
Fluorene	0.0740U	0.133	0.119J	91	0.130	0.117J	90	47-114	2.50	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0740U	0.133	0.127J	96	0.130	0.125J	96	49-130	1.20	(< 20)
Naphthalene	0.0590U	0.133	0.113J	86	0.130	0.110J	84	38-111	3.00	(< 20)
Phenanthrene	0.0436J	0.133	0.135J	69	0.130	0.137J	72	49-113	2.00	(< 20)
Pyrene	0.0547J	0.133	0.146J	69	0.130	0.146J	70	55-117	0.51	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.133	0.105	80	0.130	0.103	79	58-103	2.40	
Fluoranthene-d10 (surr)		0.133	0.111	84	0.130	0.110	85	54-113	0.76	

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/6/2022 3:51:00PM

Prep Batch: XXX46460
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 6/22/2022 9:33:41AM
Prep Initial Wt./Vol.: 22.60g
Prep Extract Vol: 5.00mL

Print Date: 07/12/2022 4:05:38PM

Method Blank

Blank ID: MB for HBN 1838359 [XXX/46464]
Blank Lab ID: 1669255

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040001, 1223040004, 1223040005, 1223040006, 1223040007, 1223040018, 1223040019, 1223040020, 1223040021

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	102	60-120		%

Batch Information

Analytical Batch: XFC16268
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MDT
Analytical Date/Time: 6/24/2022 11:21:00PM

Prep Batch: XXX46464
Prep Method: SW3550C
Prep Date/Time: 6/22/2022 3:31:13PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46464]
Blank Spike Lab ID: 1669256
Date Analyzed: 06/24/2022 23:31

Spike Duplicate ID: LCSD for HBN 1223040 [XXX46464]
Spike Duplicate Lab ID: 1669257
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040001, 1223040004, 1223040005, 1223040006, 1223040007, 1223040018, 1223040019, 1223040020, 1223040021

Results by **AK102**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	667	832	125	667	706	106	(75-125)	16.40	(< 20)
Surrogates									
5a Androstane (surr)	16.7		110	16.7		94	(60-120)	15.80	

Batch Information

Analytical Batch: **XFC16268**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MDT**

Prep Batch: **XXX46464**
Prep Method: **SW3550C**
Prep Date/Time: **06/22/2022 15:31**
Spike Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1838532 [XXX/46473]
Blank Lab ID: 1669479

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
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
Surrogates				
2-Methylnaphthalene-d10 (surr)	81.6	58-103		%
Fluoranthene-d10 (surr)	84.7	54-113		%

Batch Information

Analytical Batch: XMS13217
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/6/2022 10:11:00AM

Prep Batch: XXX46473
Prep Method: SW3550C
Prep Date/Time: 6/23/2022 11:26:09AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46473]
Blank Spike Lab ID: 1669480
Date Analyzed: 07/06/2022 10:31

Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **8270D SIM (PAH)**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0939	85	(43-111)
2-Methylnaphthalene	0.111	0.0962	87	(39-114)
Acenaphthene	0.111	0.0998	90	(44-111)
Acenaphthylene	0.111	0.0980	88	(39-116)
Anthracene	0.111	0.110	99	(50-114)
Benzo(a)Anthracene	0.111	0.101	91	(54-122)
Benzo[a]pyrene	0.111	0.104	94	(50-125)
Benzo[b]Fluoranthene	0.111	0.111	100	(53-128)
Benzo[g,h,i]perylene	0.111	0.107	97	(49-127)
Benzo[k]fluoranthene	0.111	0.108	97	(56-123)
Chrysene	0.111	0.109	99	(57-118)
Dibenzo[a,h]anthracene	0.111	0.108	97	(50-129)
Fluoranthene	0.111	0.101	91	(55-119)
Fluorene	0.111	0.104	94	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.106	96	(49-130)
Naphthalene	0.111	0.0946	85	(38-111)
Phenanthrene	0.111	0.109	98	(49-113)
Pyrene	0.111	0.101	91	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111		84	(58-103)
Fluoranthene-d10 (surr)	0.111		86	(54-113)

Batch Information

Analytical Batch: **XMS13217**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX46473**
Prep Method: **SW3550C**
Prep Date/Time: **06/23/2022 11:26**
Spike Init Wt./Vol.: 0.111 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1223040021
MS Sample ID: 1669493 MS
MSD Sample ID: 1669494 MSD

Analysis Date: 07/05/2022 21:28
Analysis Date: 07/05/2022 21:49
Analysis Date: 07/05/2022 22:09
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040014, 1223040015, 1223040016, 1223040017, 1223040018, 1223040019, 1223040020, 1223040021, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **8270D SIM (PAH)**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0136U	0.121	0.0950	79	0.122	0.0967	79	43-111	1.70	(< 20)
2-Methylnaphthalene	0.0136U	0.121	0.0965	80	0.122	0.0983	81	39-114	1.90	(< 20)
Acenaphthene	0.0136U	0.121	0.0986	82	0.122	0.101	83	44-111	2.40	(< 20)
Acenaphthylene	0.0136U	0.121	0.0953	79	0.122	0.0967	79	39-116	1.40	(< 20)
Anthracene	0.0136U	0.121	0.105	87	0.122	0.107	88	50-114	1.90	(< 20)
Benzo(a)Anthracene	0.0136U	0.121	0.0991	82	0.122	0.101	83	54-122	1.60	(< 20)
Benzo[a]pyrene	0.0136U	0.121	0.0968	80	0.122	0.101	83	50-125	4.00	(< 20)
Benzo[b]Fluoranthene	0.0136U	0.121	0.0985	82	0.122	0.107	87	53-128	7.90	(< 20)
Benzo[g,h,i]perylene	0.0136U	0.121	0.0957	79	0.122	0.0990	81	49-127	3.40	(< 20)
Benzo[k]fluoranthene	0.0136U	0.121	0.104	86	0.122	0.106	87	56-123	2.10	(< 20)
Chrysene	0.0136U	0.121	0.101	84	0.122	0.107	88	57-118	6.10	(< 20)
Dibenzo[a,h]anthracene	0.0136U	0.121	0.0968	80	0.122	0.0997	82	50-129	3.00	(< 20)
Fluoranthene	0.0136U	0.121	0.0986	82	0.122	0.102	84	55-119	3.40	(< 20)
Fluorene	0.0136U	0.121	0.101	84	0.122	0.104	85	47-114	3.00	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0136U	0.121	0.0955	79	0.122	0.0977	80	49-130	2.40	(< 20)
Naphthalene	0.0109U	0.121	0.0915	76	0.122	0.0944	77	38-111	3.00	(< 20)
Phenanthrene	0.0136U	0.121	0.107	88	0.122	0.110	90	49-113	3.20	(< 20)
Pyrene	0.0136U	0.121	0.100	83	0.122	0.104	85	55-117	3.70	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.121	0.0901	75	0.122	0.0927	76	58-103	3.00	
Fluoranthene-d10 (surr)		0.121	0.0933	77	0.122	0.0988	81	54-113	5.80	

Batch Information

Analytical Batch: XMS13216
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/5/2022 9:49:00PM

Prep Batch: XXX46473
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 6/23/2022 11:26:09AM
Prep Initial Wt./Vol.: 22.82g
Prep Extract Vol: 5.00mL

Print Date: 07/12/2022 4:05:48PM

Method Blank

Blank ID: MB for HBN 1838547 [XXX/46474]
Blank Lab ID: 1669521

Matrix: Soil/Solid (dry weight)

QC for Samples:
1223040014, 1223040015, 1223040016, 1223040017, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	9.00	mg/kg
Surrogates				
5a Androstane (surr)	109	60-120		%

Batch Information

Analytical Batch: XFC16270
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MDT
Analytical Date/Time: 6/28/2022 6:11:00PM

Prep Batch: XXX46474
Prep Method: SW3550C
Prep Date/Time: 6/23/2022 1:57:05PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223040 [XXX46474]
Blank Spike Lab ID: 1669522
Date Analyzed: 06/28/2022 18:22

Spike Duplicate ID: LCSD for HBN 1223040 [XXX46474]
Spike Duplicate Lab ID: 1669523
Matrix: Soil/Solid (dry weight)

QC for Samples: 1223040014, 1223040015, 1223040016, 1223040017, 1223040022, 1223040023, 1223040024, 1223040025, 1223040026, 1223040027, 1223040028

Results by **AK102**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	667	765	115	667	718	108	(75-125)	6.30	(< 20)
Surrogates									
5a Androstane (surr)	16.7		104	16.7		98	(60-120)	6.30	

Batch Information

Analytical Batch: **XFC16270**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MDT**

Prep Batch: **XXX46474**
Prep Method: **SW3550C**
Prep Date/Time: **06/23/2022 13:57**
Spike Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 16.7 mg/kg Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600
www.shannonwilson.com

CHAIN-OF-CUSTODY RECORD

Laboratory SGS
Attn: Jen Dawkins

Turn Around Time: [X] Normal [ ] Rush — Please Specify

Quote No:

J-Flags: [X] Yes [ ] No

1223040

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	GRO/BTEX (methanol) AK101/SW8260C	DRO/PAH AK102/SW8270D-SIM	Total Number	Composition/Grab? Sample Containers
22SCC-SS-16	(1) A-B	0655	6-9-22	X	X	2	Soil
22SCC-SS-6	(2) A-B	1500	6-8-22				
22SCC-SS-1	(3) A-B	1340	6-8-22				
22SCC-SS-22	(4) A-B	0815	6-9-22				
22SCC-SS-21	(5) A-B	0805	6-9-22				
22SCC-SS-18	(6) A-B	0740	6-9-22				
22SCC-SS-17	(7) A-B	0730	6-9-22				
22SCC-SS-5	(8) A-B	1450	6-8-22				
22SCC-SS-2	(9) A-B	1350	6-8-22				
22SCC-SS-3	(10) A-B	1415	6-8-22				

Project Information	
Number:	106427-001
Name:	Deadhorse Airport
Contact:	Michael Jaramillo
Ongoing Project?	Yes [X] No [ ]
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	54
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	5.7
Delivery Method:	Hand

Notes:

Trip Blank kept with Samples at all times

Reliquished By: 1.	Reliquished By: 2.	Reliquished By: 3.
Signature: Time: 1503	Signature: Time: 1600	Signature: Time:
Printed Name: Mason Caker Date: 6/13/22	Printed Name: Jen D. Date: 6/13/22	Printed Name: Date:
Company: Shannon + Wilson	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1503	Signature: Time:	Signature: Time: 7:57
Printed Name: Jen Dawkins Date: 6/13/22	Printed Name: Date:	Printed Name: DanikaBR Date: 6/14/22
Company: SGS	Company:	Company: SGS 4.6 D58

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

-intact IF IE
No. - CD: Linden

CHAIN-OF-CUSTODY RECORD

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Fairbanks, AK 99709
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Laboratory SGS
Attn: Jen Dawkins

1223040

Turn Around Time:	Quote No:	J-Flags:
[X] Normal [ ] Rush		[X] Yes [ ] No
Please Specify		

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	GRO/BTEX (methanol) AK101/SW8260C	DRO/PAH AK102/SW8270D-SIM	Total Num	Remarks/Matrix Composition/Grab? Sample Containers
22SCC-SS-4	(11) A-B	1425	6-8-22	X	X	2	Soil
TRIP BLANK 1	(12) A	1200				1	
TRIP BLANK 2	(13) A	1205				1	
22SCC-SS-14	(14) A-B	1600	6-9-22			2	
22SCC-SS-110	(15) A-B	1440					
22SCC-SS-13	(16) A-B	1555					
22SCC-SS-12	(17) A-B	1540					
22SCC-SS-9	(18) A-B	1435					
22SCC-SS-11	(19) A-B	1530					
22SCC-SS-23	(20) A-B	0945					

Project Information	
Number:	106427-001
Name:	Deadhorse Airport
Contact:	Michael Tramillo
Ongoing Project?	Yes [X] No [ ]
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	54
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	5.7
Delivery Method:	Hand

Reliquished By: 1.	Reliquished By: 2.	Reliquished By: 3.
Signature: Time: 1503	Signature: Time: 1609	Signature: Time:
Printed Name: Mason Crake Date: 6/13/22	Printed Name: Jen D. Date: 6/13/22	Printed Name: Date:
Company: Shannon + Wilson	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1503	Signature: Time:	Signature: Time: 7:54
Printed Name: Jen Dawkins Date: 6/13/22	Printed Name: Date:	Printed Name: Danika BR Date: 6/14/22
Company: SGS	Company:	Company: SGS 4.4°C D56

Notes:

Trip Blank kept with samples at all times

-intact IF IB

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

No. CS Linden

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Laboratory SGS Page 3 of 3
Attn: Jen Dawkins

Analytical Methods (include preservative if used)

1223040

Turn Around Time:	Quote No:	J-Flags:
[X] Normal [ ] Rush		[X] Yes [ ] No
Please Specify		

Sample Identity	Lab No.	Time	Date Sampled	GRO/BTEX (methanol) AK101/SW8260C	DRO/RAH AK102/SW8270D-SIM	Total	Composition/Grab? Sample Containers
225CC-SS-7	(21) A-B	1400	6-9-22	X	X	2	Soil
225CC-SS-8	(22) A-B	1410					
225CC-SS-10	(23) A-B	1450					
225CC-SS-24	(24) A-B	0955					
225CC-SS-19	(25) A-B	0835					
225CC-SS-20	(26) A-B	0845					
225CC-SS-120	(27) A-B	0855					
225CC-SS-15	(28) A-B	0645	↓	↓	↓	↓	↓

Project Information	
Number:	106427-001
Name:	Deadhorse Airport
Contact:	Michael Jaramillo
Ongoing Project?	Yes [X] No [ ]
Sampler:	MSC

Sample Receipt	
Total No. of Containers:	64
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	5.7
Delivery Method:	Hand

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1503	Signature: Time: 1600	Signature: Time:
Printed Name: Mason Craker Date: 6/13/22	Printed Name: Jen D. Date: 6/13/22	Printed Name: Date:
Company: Shannon + Wilson	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1505	Signature: Time:	Signature: Time: 7:59
Printed Name: Jen Dawkins Date: 6/13/22	Printed Name: Date:	Printed Name: DanikaBR Date: 6/14/22
Company: SGS	Company:	Company: SGS 4.6 D58

Notes:

Trip Blank kept with 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

- intact IF-N

No. CO-linden

e-Sample Receipt Form FBK

SGS Workorder #:	S&W	S&W

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	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 @ 5.7 °C Therm. ID: D52
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:
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/A	
Were all soil VOAs field extracted with MeOH+BFB?	N/C	
For Rush/Short Hold Time, was RUSH/Short HT email sent?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

SGS Profile #	371577	0

e-Sample Receipt Form

SGS Workorder #:	1223040	1223040

Review Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody / Temperature Requirements	*Note:* Temperature and COC seal information is found on the chain of custody form	
DOD only: Did all sample coolers have a corresponding COC?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note containers received with ice:		
Identify any 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 and sample containers.	
Were samples received within analytical holding time?	Yes	
Do sample labels match COC? Record discrepancies.	Yes	
Note: *If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*		
Were analytical requests clear?	Yes	
(i.e. method is specified for analyses with multiple option for method (Eg, BTEX 8021 vs 8260, Metals 6020 vs 200.8)		
Were proper containers (type/mass/volume/preservative)used?	Yes	
Note: Exemption for metals analysis by 200.8/6020 in water.		
Volatile Analysis Requirements (VOC, GRO, LL-Hg, etc.)		
Were all soil VOAs received with a corresponding % solids container?	Yes	
Were Trip Blanks (e.g., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (e.g., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with Methanol+BFB?	Yes	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

Sample Containers and Preservatives

Container Id	Preservative	Container Condition
1223040001-A	No Preservative Required	OK
1223040001-B	Methanol field pres. 4 C	OK
1223040002-A	No Preservative Required	OK
1223040002-B	Methanol field pres. 4 C	OK
1223040003-A	No Preservative Required	OK
1223040003-B	Methanol field pres. 4 C	OK
1223040004-A	No Preservative Required	OK
1223040004-B	Methanol field pres. 4 C	OK
1223040005-A	No Preservative Required	OK
1223040005-B	Methanol field pres. 4 C	OK
1223040006-A	No Preservative Required	OK
1223040006-B	Methanol field pres. 4 C	OK
1223040007-A	No Preservative Required	OK
1223040007-B	Methanol field pres. 4 C	OK
1223040008-A	No Preservative Required	OK
1223040008-B	Methanol field pres. 4 C	OK
1223040009-A	No Preservative Required	OK
1223040009-B	Methanol field pres. 4 C	OK
1223040010-A	No Preservative Required	OK
1223040010-B	Methanol field pres. 4 C	OK
1223040011-A	No Preservative Required	OK
1223040011-B	Methanol field pres. 4 C	OK
1223040012-A	Methanol field pres. 4 C	OK
1223040013-A	Methanol field pres. 4 C	OK
1223040014-A	No Preservative Required	OK
1223040014-B	Methanol field pres. 4 C	OK
1223040015-A	No Preservative Required	OK
1223040015-B	Methanol field pres. 4 C	OK
1223040016-A	No Preservative Required	OK
1223040016-B	Methanol field pres. 4 C	OK
1223040017-A	No Preservative Required	OK
1223040017-B	Methanol field pres. 4 C	OK
1223040018-A	No Preservative Required	OK
1223040018-B	Methanol field pres. 4 C	OK
1223040019-A	No Preservative Required	OK
1223040019-B	Methanol field pres. 4 C	OK
1223040020-A	No Preservative Required	OK
1223040020-B	Methanol field pres. 4 C	OK
1223040021-A	No Preservative Required	OK
1223040021-B	Methanol field pres. 4 C	OK
1223040022-A	No Preservative Required	OK
1223040022-B	Methanol field pres. 4 C	OK
1223040023-A	No Preservative Required	OK
1223040023-B	Methanol field pres. 4 C	OK
1223040024-A	No Preservative Required	OK
1223040024-B	Methanol field pres. 4 C	OK
1223040025-A	No Preservative Required	OK
1223040025-B	Methanol field pres. 4 C	OK
1223040026-A	No Preservative Required	OK
1223040026-B	Methanol field pres. 4 C	OK
1223040027-A	No Preservative Required	OK
1223040027-B	Methanol field pres. 4 C	OK
1223040028-A	No Preservative Required	OK
1223040028-B	Methanol field pres. 4 C	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:

Mason Craker

Title:

Geologist

Date:

July 12, 2022

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

ADEC File Number:

N/A; not directly associated with a contaminated site

Hazard Identification Number:

N/A; not directly associated with a contaminated site

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF 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:

   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:

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:

   Samples received within acceptable temperature range.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   Yes☒ No☐ N/A☐ Comments:

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes☒ No☐ N/A☐ Comments:

Samples were received 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 discrepancies.

e. Data quality or usability affected?

Comments:

Data quality or usability are 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 limits of quantitation (LOQs) for PAH analytes are elevated due to sample dilution in samples *22SCC-SS-4, 22SCC-SS-15*, *22SCC-SS-16*, *22SCC-SS-20, 22SCC-SS-120, 22SCC-SS-22, 22SCC-SS-23,* and *22SCC-SS-24*. Samples were analyzed at a dilution due to the dark color of the extract.

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

Samples identified in Section 4.b were analyzed at a dilution for PAH analysis due to the dark color of the extract.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality/usability unaffected.

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

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:

Samples listed in Section 4.b which were analyzed at a dilution due to the dark color of the extract had LODs that are greater than the project action limits for naphthalene. We cannot assess if the project sample have this analyte at concentrations less than the LOD but greater than the project action limit.

e. Data quality or usability affected?

Yes; see above.

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:

However, GRO was detected at estimated concentrations (below the LOQ) in all preparatory batches.

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

All project samples had estimated detections for GRO within five times the concentrations detected in the method blank samples. The sample results are considered non-detect at the LOQ and are flagged "B" in the analytical summary tables.

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:

LCS samples were reported for BTEX and PAH analyses. Refer to Section 6.c for assessment of laboratory precision.

LCS/LCSD samples were reported for GRO and RRO analyses.

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 required for this project.

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:

1223040

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July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

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:

N/A, see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

N/A, see above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability are 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 BTEX and PAH analyses.

MS and MSD samples were not repored for GRO and DRO analyses. Refer to Section 6.b for assessment of laboratory precision and accuracy for these analyses.

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 required for this project.

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

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:

N/A, 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:

Data quality or usability are 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:

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

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:

Surrogate recoveries were within laboratory QC criteria.

iv. Data quality or usability affected?

Comments:

Data quality or usability is unaffected.

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:

iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A, see above.

v. Data quality or usability affected?

Comments:

Data quality or usability are unaffected.

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

Duplicate pairs are *22SCC-SS-10/22SCC-SS-110* and *22SCC-SS-20/22SCC-SS-120*.

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = 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:

Field duplicate RPDs were within the project data quality objective of 50%, where calculable.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality or usability unaffected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☐ No☐ N/A☒ Comments:

Samples were collected with single use equipment.

i. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☒ Comments:

See above.

1223040

Laboratory Report Date:

July 12, 2022

CS Site Name:

Deadhorse Airport DOT&PF PFAS

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

See above.

iii. Data quality or usability affected?

Comments:

Data quality or usability unaffected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes☐ No☐ N/A☒ Comments:

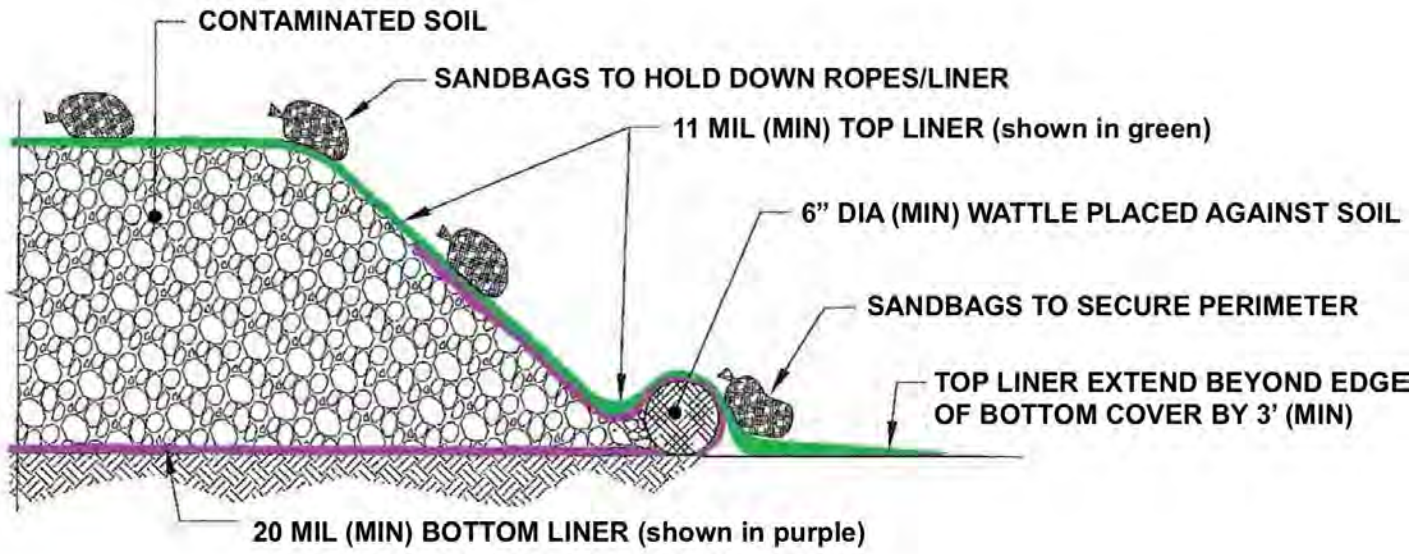
Additional data flags/qualifiers were not required.

ATTACHMENT C: STOCKPILE MANAGEMENT GUIDANCE

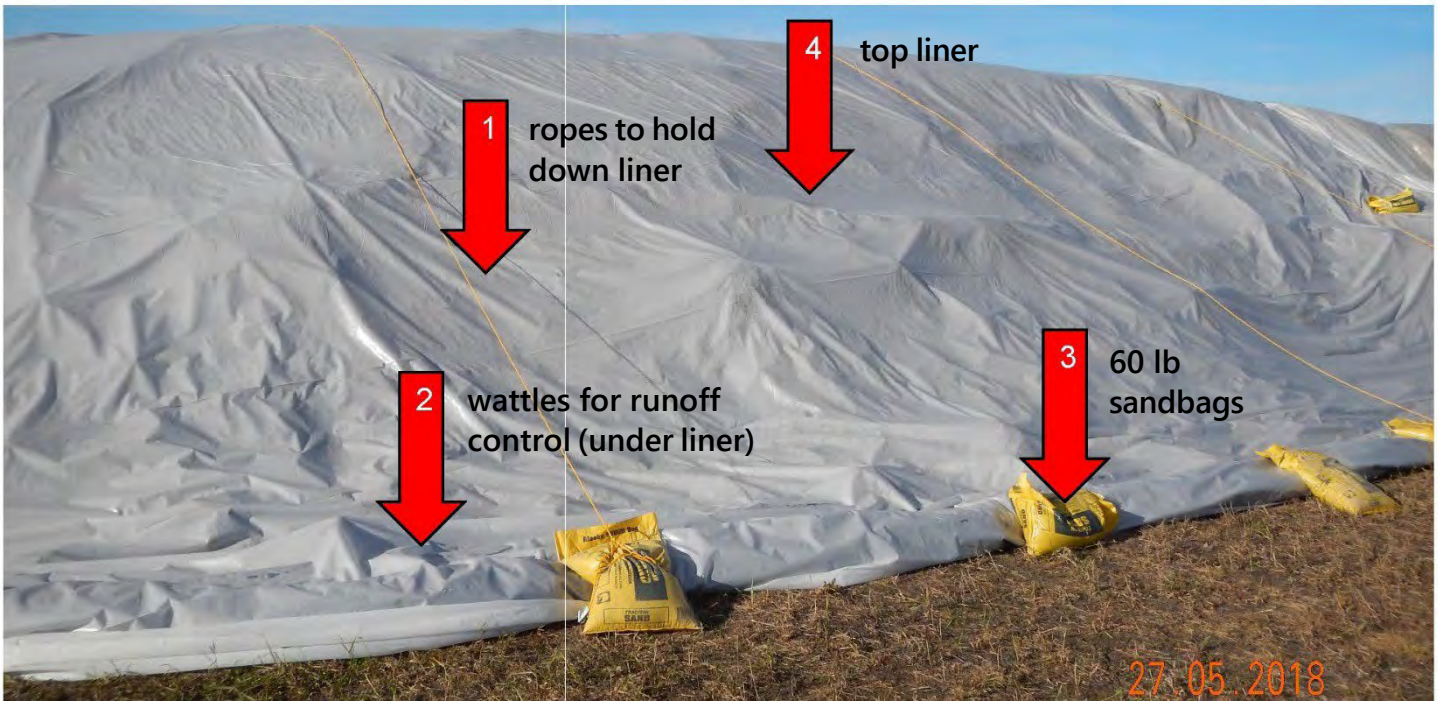
Attachment C

Stockpile Management Guidance

Example of a Cross-Section Diagram of Proper Stockpile Storage:



Example of a Stockpile from Eielson AFB Restoration Program's Stockpiling Contaminated Soils Standard Operating Procedure:



PFAS-CONTAMINATED MATERIAL
DO NOT DISTURB

[CONTRACTOR COMPANY NAME]

[POC NAME] [POC PHONE #]

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

[POC NAME] [POC PHONE #]

STATE PROJECT NO.

SFAPT00144

GENERATION DATE: MONTH/DATE/YEAR

POTENTIAL PFAS-CONTAMINATED MATERIAL DO NOT DISTURB

[CONTRACTOR COMPANY NAME]

[POC NAME] [POC PHONE #]

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

[POC NAME] [POC PHONE #]

STATE PROJECT NO.

SFAPT00144

GENERATION DATE: MONTH/DATE/YEAR

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

SPILL PREVENTION & RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, Alaska 99709
Main: 907.451.2143
Fax: 907.451.2155
www.dec.alaska.gov

File No.: 300.38.327

February 22, 2023

Electronic Delivery Only
William Sexton, EIA 3
Alaska Department of Transportation & Public Facilities
2301 Peger Rd.
Fairbanks, AK 99709

Subject: DEC Approval of Contaminated Soils Management Plan (CSMP), Deadhorse Airport (SCC) Improvements Project NFAPT00549 AIP 3-02-0339-XXX-20XX. Deadhorse, Alaska (Stantec Consulting Services, January 2023)

Dear Mr. Sexton,

The Alaska Department of Conservation (ADEC) has received and reviewed the final Contaminated Soils Management Plan (CSMP) for the Deadhorse Airport (SCC). The CSMP will act as a guidance for the handling, transporting, and storing of potentially contaminated materials located at the Deadhorse Airport during multiple improvement projects. DEC provided comments on a draft of this document in late December 2022. A final CSMP, addressing all of DEC's comments, was submitted in mid-January 2023 and it is approved.

If you have any questions, please contact me at (907) 451-5175 or via email at jamie.mckellar@alaska.gov.

Sincerely,

Jamie McKellar

Jamie McKellar
Environmental Program Specialist

Enclosure: Final comment table for SCC CSMP

cc (via email): Bill O'Connell, DEC
Nick Waldo, DEC
Alyssa Wood, DEC

Document: Contaminated Soils Management Plan (CSMP) Deadhorse Airport (SCC) Improvements Project NFAPT00549 AIP 3-02-0339-XXX-20XX, Deadhorse, Alaska

Reviewers: Bill O'Connell and Alyssa Wood

Comment No.	Page/ Section	DEC Comment/Recommendation: 12/28/2022	DOT Response: 1/2023 DEC Response: 2/22/2023
1.	General	The provided *Preliminary PFAS Investigation Report* includes information necessary for this CSMP. When is a Draft Final Report detailing the 2022 sampling event expected to ADOT and ADEC for review?	The FINAL PFAS Investigation Report was finalized after receiving these comments and will be distributed by Stantec to ADOT for their review and distribution to ADEC. The finalized report is included in this revision to the CSMP but the Appendix will be updated once comments to the PFAS Investigation Report from ADOT and ADEC are addressed. **2/22/2023: DEC Accepts**
2.	General	Previous site characterization and anecdotal evidence indicates significant petroleum contamination may be present along Deadhorse Drive. In addition to managing petroleum contaminated soil, the contractor should have sorbent pads or boom on hand to deal with sheen on surface water that occurs during excavation activities in this area.	The end of Section 6, page 9 was updated to include the following: "In addition to managing petroleum contaminated soils, work conducted near the identified contaminated sites may encounter petroleum product on water. Best Management Practices will be implemented in these areas where a sheen is observed on surface water to remove the sheen using sorbent pads or containment booms, to the extent practicable. . " **2/22/2023: DEC Accepts**

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

SPILL PREVENTION & RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, Alaska 99709
Main: 907.451.2143
Fax: 907.451.2155
www.dec.alaska.gov

File No.: 300.38.327

February 16, 2023

Electronic Delivery Only
William Sexton, EIA 3
Alaska Department of Transportation & Public Facilities
2301 Peger Rd.
Fairbanks, AK 99709

Subject: DEC Approval of Final Revision 1 – PFAS Investigation Report, Deadhorse Airport (SCC) Fence Installation, Deadhorse, Alaska (Shannon & Wilson, February 2023)

Dear Mr. Sexton,

The Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (CSP) has received and reviewed *the Final Revision 1 – PFAS Investigation Report* for the Deadhorse Airport (SCC) Fence Installation project. This report documents the findings from the initial per- and polyfluoroalkyl substances (PFAS) analytical sampling at the Deadhorse Airport (SCC) in Deadhorse, Alaska. DEC provided minor comments on a draft of this document on January 30, 2023. A final report addressing DEC's comments was submitted on February 16, 2023, and it is approved.

If you have any questions, please contact me at (907) 451-5175 or via email at jamie.mckellar@alaska.gov.

Sincerely,

Jamie McKellar
Environmental Program Specialist

cc, via email: Johnathan Hutchinson, ADOT&PF
Bill O'Connell, DEC
Nick Waldo, DEC
Alyssa Wood, DEC

From:	McKellar, Jamie M (DEC)
To:	Sexton, William J (DOT)
Cc:	Hutchinson, Jonathan J (DOT); O"Connell, Bill A (DEC); Waldo, Nick B (DEC); Wood, Alyssa (DEC)
Subject:	RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP
Date:	Thursday, February 16, 2023 12:33:47 PM
Attachments:	image001.png 2023.02.16 Ltr DEC Apprvl SCC PFAS Investigation Rpt .pdf

Bill,

DEC's approval letter is attached for the Deadhorse PFAS Investigation related to fence installation at SCC.

I'm noticed that we've also been reviewing a related Contaminated Soil Management Plan and it looks like we received a final on January 12, 2023. Do you still need an approval letter for the CSMP?

Thanks,
Jamie

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Thursday, February 16, 2023 11:33 AM
To: McKellar, Jamie M (DEC) <jamie.mckellar@alaska.gov>; Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Good Morning Jamie,

Attached for your review is the final letter report revised per Alyssa's comments. Let me know if any further edits are required or if you would like additional information regarding the project.

Thanks,
Bill Sexton
Environmental Impact Analyst
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

From: McKellar, Jamie M (DEC) <jamie.mckellar@alaska.gov>
Sent: Tuesday, February 7, 2023 11:51 AM

To: Sexton, William J (DOT) <william.sexton@alaska.gov>; Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

William,

Alyssa is going to be on leave for several weeks. For this letter report, you do not need to add the additional elements. I think Alyssa intended that to be more of a general/FYI comment.

Please feel free to formalize the document as is and I will issue an approval letter.

Thanks,

Jamie McKellar
Alaska Dept. of Environmental Conservation
Contaminated Sites Program
610 University Avenue
Fairbanks, AK 99709
(907) 451-5175

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Tuesday, February 7, 2023 11:40 AM
To: Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; McKellar, Jamie M (DEC) <jamie.mckellar@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Hey Alyssa,

I had some question from the contractor re: your review. It sounds like they were thinking that a letter report would be sufficient for this. I just wanted to confirm with you whether or not you're looking for them to add in multiple elements to create a more formal report (Cover Page, Executive Summary, Table of Contents, Conceptual Site Model, QA/QC Narrative, etc.). Once I have this confirmation from you I can confirm with them whether or not to formalize the report.

Thanks,
Bill

From: Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Sent: Monday, January 30, 2023 11:16 AM
To: Sexton, William J (DOT) <william.sexton@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; McKellar, Jamie M (DEC) <jamie.mckellar@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Good Morning Bill,

ADEC has completed an initial review of the Draft Final PFAS Investigation Report, Deadhorse Airport (SCC) Fence Installation Project NFAPT00549, AIP 3-02-0339-20XX, Deadhorse, Alaska. ADEC's comments for the report are attached. Please let me know if you have any questions.

Alyssa

Alyssa Wood
Environmental Program Specialist
Contaminated Sites Program
(o): 907-269-4587

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Friday, January 13, 2023 8:52 AM
To: Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Good Morning Alyssa,

Attached for your review are: the Draft Final Report detailing the sampling event at Deadhorse Airport, the updated CSMP to include the BMPs suggested in your comments, and the comment page detailing our responses to the CSMP comments we received. Let me know if you have any further questions or comments, I'll be available by email or phone.

Have a great long weekend,

Bill Sexton
Environmental Impact Analyst III
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, AK 99811-1800
Phone: 907-465-5250
Fax: 907-465-5218
www.dec.alaska.gov

File: N/a

December 29, 2022

Electronic Delivery Only
Alaska Department of Transportation & Public Facilities
ATTN: Bill Sexton
2301 Peger Rd
Fairbanks, AK 99709

RE: ADEC Review of the Contaminated Soils Management Plan (CSMP), Deadhorse Airport (SCC) Improvements Project NFAPT00549 AIP 3-02-0339-XXX-20XX. Deadhorse, Alaska

Dear Mr. Sexton:

The Alaska Department of Conservation (DEC) has completed a review of the Contaminated Soils Management Plan (CSMP), Deadhorse Airport (SCC), which we received on December 20, 2022. This report will act as a guidance for the handling, transporting, and storing of potentially contaminated materials located at the Deadhorse Airport during multiple improvement projects.

DEC's comments for the report are attached. Please call 907-269-4587 or email alyssa.wood@alaska.gov if you have any questions.

Sincerely,

Alyssa Wood

Alyssa Wood
Environmental Program Specialist

Attachments/Enclosures: DEC Comments Matrix

cc (via email): Bill O'Connell, DEC
Nick Waldo, DEC

Document: CONTAMINATED SOILS MANAGEMENT PLAN (CSMP) Deadhorse Airport (SCC) Improvements Project NFAPT00549 AIP 3-02-0339-XXX-20XX DEADHORSE, ALASKA

Reviewers: Bill O'Connell and Alyssa Wood

Comment No.	Page/ Section	DEC Comment/Recommendation: 12/28/2022	Response:
1.	General	The provided *Preliminary PFAS Investigation Report* includes information necessary for this CSMP. When is a Draft Final Report detailing the 2022 sampling event expected to ADOT and ADEC for review?	
2.	General	Previous site characterization and anecdotal evidence indicates significant petroleum contamination may be present along Deadhorse Drive. In addition to managing petroleum contaminated soil, the contractor should have sorbent pads or boom on hand to deal with sheen on surface water that occurs during excavation activities in this area.	
3.	End of comments		

From: Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Sent: Thursday, December 29, 2022 9:33 AM
To: Sexton, William J (DOT) <william.sexton@alaska.gov>
Cc: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Good Morning Bill,

Bill O'Connell and myself have reviewed the Contaminated Soils Management Plan (CSMP) for upcoming projects at the Deadhorse Airport in Deadhorse, AK. Please review our attached comments and let us know if you have any questions.

Thank you,
Alyssa

Alyssa Wood
Environmental Program Specialist
Contaminated Sites Program
(o): 907-269-4587

From: O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>
Sent: Tuesday, December 20, 2022 11:17 AM
To: Sexton, William J (DOT) <william.sexton@alaska.gov>
Cc: Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Wood, Alyssa (DEC) <alyssa.wood@alaska.gov>
Subject: RE: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Thanks Bill, we've assigned this site to Alyssa Wood, so please include her on future emails. We'll both be reviewing the plan and get back to you with comments, do you have any upcoming deadlines we should be aware of?

Bill

Bill O'Connell
Environmental Program Manager
ADEC Contaminated Sites Program
(907) 269-3057

From: Sexton, William J (DOT) <william.sexton@alaska.gov>
Sent: Tuesday, December 20, 2022 10:50 AM
To: O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>
Cc: Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>; Waldo, Nick B (DEC) <nick.waldo@alaska.gov>; Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>

Subject: Deadhorse Airport Improvements (NFAPT00549) PFAS CSMP

Good Morning Bill,

I've been working with Stantec Consulting Services and Shannon & Wilson to create a Contaminated Soils Management Plan (CSMP) for an upcoming project at the Deadhorse Airport in Deadhorse, AK. As part of the environmental process, DOT&PF is looking to establish a work plan through the attached CSMP that will be followed by the contractor(s) that will be carrying out the proposed project.

First, some information about the project. The proposed project is aimed at improving operational safety at Deadhorse Airport by (1) installing a fence around the airport property in order to prevent caribou herds from crossing operational surfaces, (2) filling in infield drainage ponds to reduce likelihood of waterfowl strike hazards and (3) improve existing drainage deficiencies across airport property. A preliminary investigation on airport property for PFAS found that some areas proposed for excavation as part of the proposed project are also contaminated by PFOS (Attachment B of CSMP). The CSMP details how known and potentially contaminated materials will be handled during the proposed project.

I am reaching out to request your review of the attached CSMP. If everything is in order upon your review, approval by ADEC will be documented in the EA for this project and the proposed management plan will be incorporated into construction phasing to be completed by the contractor. If you have any questions or edits you would like to see made feel free to reach out by email or phone. I am also available for a scheduled meeting if you would like additional project details to assist you in your review.

Happy Holidays,

Bill Sexton
Environmental Impact Analyst III
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907)451-2605

From: Reese, Evonne R (DEC)
To: Karczmarczyk, Paul
Cc: Reese, Evonne R (DEC)
Subject: RE: Deadhorse Airport Haz Mat site info
Date: Friday, October 21, 2022 2:23:52 PM

Hi Paul,
I've done a little digging into the issue of the site location of the record called ADOT&PF Sag River Maintenance and I have not had any luck finding any documented lat/long for the site. We are in the middle of a scanning project and the file for this site is out being scanned by contractors. I did find though a 2000 Shannon & Wilson bulk work plan for dealing with numerous ADOT UST sites, and the Sag River site was included. On that document it listed the location as Mile 306 Dalton Highway, which is different than we had in the database record. We had Mile 265.5 Dalton Highway. I have corrected the database record to show Mile 306 Dalton Highway as the location along with the corresponding lat/long, which removes this site on the map from the area you are investigating. As far as I can tell, there is not another site that should be located at the former incorrect Deadhorse location.

These details are hard to explain in writing so let me know if you have any questions.

Thanks for reporting the problem.

Evonne Reese

Environmental Program Specialist
Contaminated Sites Program
Spill Prevention and Response Division
Department of Environmental Conservation

(907) 465-5229

From: Karczmarczyk, Paul <Paul.Karczmarczyk@stantec.com>
Sent: Friday, October 21, 2022 10:47 AM
To: Reese, Evonne R (DEC) <evonne.reese@alaska.gov>
Subject: Deadhorse Airport Haz Mat site info

Paul Karczmarczyk
Senior Environmental Scientist
Office: +1 907-343-5104
Mobile: + 1 907-371-9607
paul.karczmarczyk@stantec.com

Stantec Consulting Inc.
475 Riverstone Way Unit 3
Fairbanks AK 99709-2945

From: Hutchinson, Jonathan J (DOT)
To: Niemiec, Andrew
Cc: Sexton, William J (DOT); Karczmarczyk, Paul
Subject: FW: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*
Date: Thursday, March 3, 2022 2:23:52 PM
Attachments: image003.png
image005.png
image001.png
image006.png
image007.png

Andrew,
Please see scoping comments from DEC.
I'd to get ahead of this as best we can, in case there becomes a need to perform a Phase 1 or 2 ESA.
Please prepare materials that describe project impacts sufficient to coordinate further with DEC for each of the sites identified.
Can discuss if you need.

-Jonathan

From: CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>
Sent: Wednesday, March 2, 2022 5:42 PM
To: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>; Sexton, William J (DOT) <william.sexton@alaska.gov>
Cc: Mutter, Sarah A (DEC) <sarah.mutter@alaska.gov>; Krebs-Barsis, Lisa K (DEC) <lisa.krebs-barsis@alaska.gov>
Subject: RE: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

Yes, I notice the (.) in there as well, sorry about that. Below are our comments:

> After a quick review of the proposed project and the CSP Database and it appears there are 20 identified contaminated sites (Active, Cleanup Complete, Cleanup Complete with ICs) within 1,500 feet of the project area and four sites (Cleanup Complete and Cleanup Complete with ICs) near Mine Site 3-Source Material Area (see image below). When a project is potentially disturbing soil or groundwater in the vicinity of any contaminated site, the Contaminated Sites Program (CSP) must be consulted prior to the activity. Depending on the area being disturbed and work being conducted, a project manager may require a Soil and Water Management Plan (SWMP) to ensure soil and groundwater are managed in a way that does not mobilize existing contaminant plumes or spread contamination through excavation, stockpiling, disposal, reuse, and dewatering activities, etc. At this time based on the information provided, it is unclear where, soil and water disturbances, soil stockpiling, and other activities will occur. When this information becomes available, ADEC project managers for these contaminated sites will need to be contacted to determine if there are specific concerns or whether a SWMP will be needed. Contact information for individual project managers can be found under the Staff field in the CSP Web Map and the database. For sites that are listed as Cleanup Complete (CC), please contact the IC Unit at DEC.ICUnit@alaska.gov or (907) 465-5229. Alternately, for larger projects with many contaminated sites, a SWMP consultation request can be sent to the CS.Scoping@alaska.gov inbox and a project manager can coordinate responses for ADOT&PF to help determine which areas (if any) will need a SWMP.
>
> In addition, at some airports, there may be past or present use of aqueous firefighting foams (AFFF) for training activities and for fuel fire suppression. Use of AFFF can result in PFAS contamination of soil, surface water, groundwater, and can also be found in asphalt. While not all airports have been evaluated for PFAS contamination, ADEC and ADOT&PF are working to evaluate current and former Part 139 airports and former defense sites owned by ADOT&PF for PFAS. Already, ADOT&PF Statewide Aviation has submitted a workplan to an ADEC Project Manager, Sarah Mutter, to evaluate for PFAS in preparation for this project. If PFAS is present, please also coordinate this work with Sammy Cummings, PFAS Program Manager – ADOT&PF Statewide Aviation (907) 888-5671 or sammy.cummings@alaska.gov.
>
> For all projects, if during the construction a previously unknown area of contamination is discovered or a spill occurs, please be aware that **Alaska state law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation**. For reporting information, please visit: https://dec.alaska.gov/spar/ppr/spill-information/reporting/

JAMIE GRANT
Project Manager | State Sites Coordinator
ADEC Contaminated Sites Program
555 Cordova Street Anchorage, AK 99501
Office: 907.334.5939
Email: Jamie.Grant@alaska.gov

From: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Sent: Wednesday, March 2, 2022 12:23 PM
To: CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>
Subject: RE: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

Hello,
Following up on this.
We look forward to coordinating details with your team.
We are presently planning to investigate the project area for PFAS this summer.

You may send scoping comments to me, or William.sexton@alaska.gov
I believe the email bounced back because there was a (.) at the end of the email link.

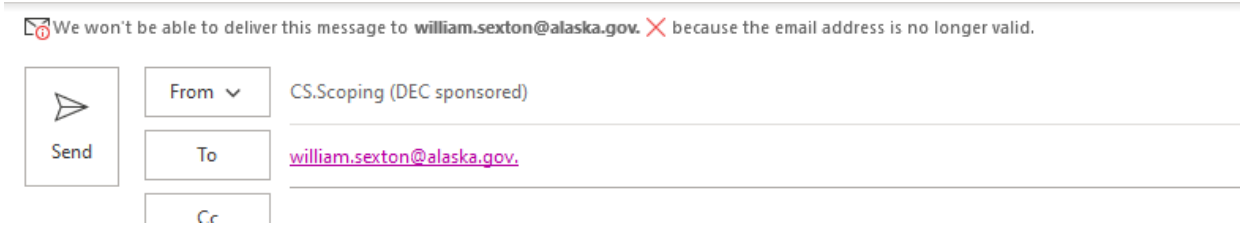
Regards,
Jonathan

From: Hutchinson, Jonathan J (DOT)
Sent: Tuesday, March 1, 2022 8:42 AM
To: CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>
Subject: RE: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

You may send it to me. Thank you.

From: CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>
Sent: Monday, February 28, 2022 5:36 PM
To: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Subject: RE: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

DEC may have comments for this project, but the email address for William Sexton says that it is not deliverable. Can you please direct me to whom our comments should be delivered?



JAMIE GRANT
Project Manager | State Sites Coordinator
ADEC Contaminated Sites Program
555 Cordova Street Anchorage, AK 99501
Office: 907.334.5939
Email: Jamie.Grant@alaska.gov

From: Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>
Sent: Thursday, January 27, 2022 4:06 PM
To: Krebs-Barsis, Lisa K (DEC) <lisa.krebs-barsis@alaska.gov>; Grant, Jamie D (DEC) <jamie.grant@alaska.gov>
Cc: O'Connell, Bill A (DEC) <bill.oconnell@alaska.gov>; Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>
Subject: FW: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

Wanted to make sure you received this one. It looks like one we may want to provide comments on.

HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION
A December 2021 search of ADEC's Contaminated Sites Program database website identified 12 contaminated sites within the proposed project airport construction area, and an additional 9 within approximately 1,500 feet of that area within other on-airport operation areas and lease properties. An additional 15 contaminated sites of varying status are located from 1,500 feet to 1 mile away from the proposed airport construction area.

Stephanie

From: Hutchinson, Jonathan J (DOT) <jonathan.hutchinson@alaska.gov>
Sent: Tuesday, January 25, 2022 4:17 PM
To: charlene.felkley@noaa.gov; greg.balogh@noaa.gov; Ott, Kaithryn <kaithryn_ott@fws.gov>; Ted_Swem@fws.gov; bob_henszey@fws.gov; Brase, Audra L (DFG) <audra.brase@alaska.gov>; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>; Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; curtis.jennifer@epa.gov; Ryan.h.winn@usace.army.mil; Cold, Helen S (DFG) <helen.cold@alaska.gov>; harry.brower@north-slope.org; gordon.brower@north-slope.org; ibrower@asrc.com; jnukapigak@kuukpik.com; nvkaktovik@gmail.com; native.village@astacalaska.net; office@cityofkaktovik.org; mayor@cityofnuiqsut.org; Olson, Donny (LEG) <senator.donny.olson@akleg.gov>; Representative.Josiah.Patkotak@akleg.gov; amy.fuller.lyman@alaskaair.com; jarlington@gmail.com; jeff@alaskaind.com; tim.cudney@fairweather.com; dave.chaput@akfrontier.com; coopert@articfoxenv.com; clover@astac.net; lloyd@astac.net; briand@astac.net; dbryant@asrcenergy.com; ap@theblackgoldgroup.com; todd@bilista.net; 'adventure@northernalaska.com' <adventure@northernalaska.com>; thendrix@carlile.biz; nsfecoord@ccialaska.com; dave@colvilleinc.com; rpeterson@colvilleinc.com; cciap@cruzconstruct.com; tpquick@gci.net; kcovington@erahelicopters.com; anna.klene@gmail.com; rloud@alutiiq.com; tj@iceservices.net; tschuerch@calistacorp.com; john.neason@nabors.com; david.hebert@nabors.com; felvsaas@nana.com; erin@nsenergy.com; rwnyman@gmail.com; jared.tharp@platformaero.com; bstinson@pricegregory.com; theresa.bayer@eliasonholding.com; jeff@hammltd.com; kris@tank-oalaska.com; accounting@tank-oalaska.com; jlyons@tdxpower.com; chris@truenorthconstructors.com; sarah.j.kilpatrick@faa.gov; brad.grooms@faa.gov; sheri.ctr.sinclair@faa.gov; desiegfried@alaska.edu; anita.drydale@weatherford.com; operations@seventynorth.com
Cc: Sexton, William J (DOT) <william.sexton@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Edic, Heather M (FAA) <Heather.M.Edic@faa.gov>; Larson, Venus (FAA) <venus.larson@faa.gov>; Parault, Timothy D (DOT) <tim.parault@alaska.gov>; Russell, William J (DOT) <jeff.russell@alaska.gov>

Subject: NFAPT00549, Deadhorse Airport Improvements, *request for scoping comments*

Dear Agency or Public Stakeholder,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes to construct airport improvements at the Deadhorse Airport (FAA Airport Code: SCC), in Deadhorse, Alaska. The Deadhorse Airport Improvements Project (State Project No. NFAPT00549) is federally funded through FAA's Airport Improvement Program (AIP). DOT&PF is seeking your review of, and comments on, the proposed project (See attached Scoping Materials) to support preparation of an environmental document in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Your and others' responses will provide necessary data and input that will help us develop a final proposed project design that avoids or minimizes potential adverse environmental and human impacts.

We are working to complete environmental documentation for the proposed project by mid-fall 2022, and anticipate construction to commence in late 2023 and take 2-3 years to complete. To maintain schedule, we are respectfully requesting your written comments by no later than February 28th. Please mail comments to: DOT&PF Attn: William Sexton, 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: *william.sexton@alaska.gov*.

Thank you for your attention to this request, if you have any questions regarding the proposed project, you may contact me at (907) 451-5479.

Regards,

Jonathan J. Hutchinson, P.E.
Project Manager, NR DOT&PF Rural Transportation Team
907-451-5479 | *jonathan.hutchinson@alaska.gov*