

SUBMITTED TO:  
Alaska Department of  
Transportation & Public  
Facilities  
2301 Peger Road  
Fairbanks, Alaska 99709

BY:  
Shannon & Wilson, Inc.  
2355 Hill Road  
Fairbanks, Alaska 99709  
  
(907) 479-0600  
[www.shannonwilson.com](http://www.shannonwilson.com)

FINAL

GENERAL WORK PLAN ADDENDUM  
DOT&PF Statewide PFAS  
Addendum 024-SDP-01  
Water Supply Well Sampling  
SAND POINT, ALASKA

PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING

Submitted To: Alaska Department of Transportation & Public Facilities  
2301 Peger Road  
Fairbanks, Alaska 99709  
Attn: Sammy Cummings

Subject: FINAL GENERAL WORK PLAN ADDENDUM, DOT&PF STATEWIDE PFAS  
ADDENDUM 024-SDP-01  
WATER SUPPLY WELL SAMPLING, SAND POINT, ALASKA

Shannon & Wilson has prepared this Work Plan Addendum on behalf of the Alaska Department of Transportation & Public Facilities (DOT&PF). This Addendum is a supplement to the *DOT&PF Statewide PFAS General Work Plan (GWP)*, dated July 2020. The services proposed in this GWP Addendum, 024-SDP-01, describes the DOT&PF planned activities for water supply well (WSW) search and sampling for per- and polyfluoroalkyl substances (PFAS) associated with the Sand Point Airport (SDP).

The scope of services was specified in our proposal dated June 16, 2022 and authorized by a notice to proceed (NTP) on August 26, 2022 by DOT&PF under Professional Services Agreement Number 25-19-013 *Per- and Polyfluorinated Substances (PFAS) Related Environmental & Engineering Services*.

This GWP Addendum was prepared and reviewed by:

Amber Masters  
Environmental Scientist

Kristen Freiburger  
Associate, Statewide Project Manager

ARM:KRF:CBD/arm

CONTENTS

1 Introduction ..... 1

1.1 Background ..... 1

1.1.1 Previous Environmental Investigations ..... 2

1.1.1.1 DOT&PF ARFF Building Sand Point ..... 2

1.1.2 Climate ..... 3

1.1.3 Vegetation ..... 3

1.1.4 Geology and Soils ..... 3

1.1.5 Hydrology ..... 3

1.2 Project Objectives and Scope ..... 4

2 Site and Project Description ..... 4

2.1 Site Location and Boundaries ..... 4

2.2 Potential Sources of PFAS Contamination ..... 4

2.3 Contaminants of Potential Concern and Regulatory Levels ..... 5

2.4 Conceptual Site Models ..... 6

2.5 Project Team ..... 6

2.6 Project Schedule and Submittals ..... 7

3 Water Supply Well Sampling Activities ..... 8

3.1 Water Supply Well Search and Sampling ..... 8

4 Sampling and Analysis Plan ..... 9

4.1 Analytical Sample Summary ..... 9

4.2 Special Considerations for PFAS Sampling ..... 9

4.3 Analytical Laboratories and Methods ..... 9

4.4 Sample Containers, Preservation, and Holding Times ..... 10

4.5 Sample Custody, Storage, and Transport ..... 10

4.6 Equipment Decontamination ..... 10

4.7 Investigative Derived Waste Management ..... 10

4.8 Deviations from the General Work Plan ..... 10

5 Quality Assurance Project Plan ..... 11

5.1 Quality Assurance Objectives ..... 11

5.2 Field Documentation ..... 11

5.3 Field Instrument Calibration ..... 11

5.4 Field Quality Control Samples ..... 11

    5.4.1 Field Duplicate Sample ..... 12

    5.4.2 Equipment Blank Samples ..... 12

    5.4.3 Temperature Blank Samples ..... 12

5.5 Laboratory Quality Control Samples ..... 12

5.6 Laboratory Data Deliverables ..... 12

5.7 Data Reduction, Evaluation, and Reporting ..... 12

6 References ..... 13

Exhibits

Exhibit 1-1: Airport Information ..... 1

Exhibit 2-1: COPCs, Regulatory and Laboratory Reporting Limits ..... 5

Exhibit 2-2: Project Team ..... 7

Exhibit 4-1: Analytical Sample Summary ..... 9

Exhibit 4-2: Sample Containers, Preservation, and Holding Time Requirements ..... 10

Exhibit 5-1: Quality Assurance Objectives for Analytical Samples ..... 11

Figures

- Figure 1: Vicinity Map
- Figure 2: Site Map

Appendices

- Appendix A: Conceptual Site Model
- Appendix B: Site Safety and Health Plan
- Important Information

## ACRONYMS

AAC	Alaska Administrative Code
AFFF	aqueous film forming foam
ARFF	Airport Rescue and Firefighting
COPC	contaminant of potential concern
CSM	Conceptual Site Model
DEC	Alaska Department of Environmental Conservation
DoD	Department of Defense
DOT&PF	Alaska Department of Transportation & Public Facilities
DVPP	Data-Validation Program Plan
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
GWP	<i>DOT&amp;PF Statewide PFAS General Work Plan – Revision 1</i>
IDW	investigative-derived waste
LHA	lifetime health advisory
ng/L	nanograms per liter
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
POC	point of contact
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual 5.3
RL	reporting limit
SDP	Sand Point Airport
SSHP	Site Safety and Health Plan
SREB	Snow Removal Equipment Building
USGS	U.S. Geological Survey
WSW	water supply well

# 1 INTRODUCTION

This Addendum, 024-SDP-01, is a supplement to the *DOT&PF Statewide PFAS General Work Plan – Revision 1* (GWP). This Addendum, in collaboration with the GWP, provides guidance to conduct a water supply well (WSW) search and sampling event for per- and polyfluoroalkyl substances (PFAS) near the Sand Point Airport (SDP) in Sand Point, Alaska (Figure 1, Exhibit 1-1).

Shannon & Wilson has prepared the GWP and this Addendum in accordance with Alaska Department of Environmental Conservation’s (DEC) March 2017 *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* (DEC, 2017) and January 2022 *Field Sampling Guidance* document (DEC, 2022a). If additional activities are required that are not covered in the GWP or deviations are made to the GWP, they will be described in this Addendum.

The SDP is a state-owned airport managed by the Alaska Department of Transportation and Public Facilities (DOT&PF). Additional information regarding the SDP is listed in Exhibit 1-1 below.

## Exhibit 1-1: Airport Information

<b>Airport Name:</b>	<b>Sand Point Airport</b>
Airport Code:	SDP
DEC File No. / Hazard ID:	No PFAS-related File Number
Airport Address:	268 Airport Road, Sand Point, Alaska 99661
DOT&PF Region:	Southcoast
DOT&PF Regional POC:	Spencer Gates
DOT&PF PFAS POC:	Sammy Cummings
Airport Type:	Current Part 139 Airport
Airport Coordinates (Lat/Long):	55.3136, -160.5213

POC = point of contact

## 1.1 Background

General background information relating to sites covered under the GWP is included in Section 1.1 of the GWP. Background information specific to the SDP is detailed below.

DOT&PF Aircraft Rescue and Firefighting (ARFF) services has used aqueous film forming foam (AFFF) for training and systems testing for many years. Part 139 Airports are required to conduct annual AFFF systems testing to maintain their certification through the Federal Aviation Administration (FAA). Prior to 2019, FAA inspections required the release of AFFF to the ground surface.

Perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) are two PFAS commonly found at sites where AFFF were used. Due to their persistence, toxicity, and bioaccumulative potential, these compounds are of increasing concern to environmental and health agencies. In May 2016 the U.S. Environmental Protection Agency (EPA) published a recommended Lifetime Health Advisory (LHA) level of 70 nanograms per liter (ng/L) for the sum of PFOS and PFOA in drinking water. In June 2022 the EPA published Interim LHAs of 0.004 ng/L for PFOA and 0.02 ng/L PFOS, and Final LHAs of 2,000 ng/L for perfluorobutanesulfonic acid, and 10 ng/L for hexafluoropropylene oxide dimer acid and its ammonium salt (together referred to as “GenX chemicals”).

The DEC Contaminated Sites Program published groundwater-cleanup levels of 400 ng/L for PFOS and PFOA in November 2016. Prior to the publication of these levels, there were no state-level cleanup levels established for PFAS. On October 2, 2019, DEC published a Technical Memorandum amending the April 9, 2019, Technical Memorandum to include additional PFAS analytes to the testing requirements. Per DEC guidance, the current drinking water action level remains 70 ng/L for the sum of PFOS and PFOA. A summary of the changes to action levels and regulatory requirements is described in Section 1.1 of the GWP.

### 1.1.1 Previous Environmental Investigations

The following sections summarize various environmental investigations that may be of interest to understand PFAS contamination at and near the SDP. Additional environmental investigations are reported in the DEC Contaminated Sites database near the SDP; however, due to their distance from the ARFF building and lack of PFAS-containing contaminants (i.e., AFFF releases), it is unlikely these sites have contributed to PFAS contamination at or from the SDP.

#### 1.1.1.1 DOT&PF ARFF Building Sand Point

The ARFF and Snow Removal Equipment (SREB) buildings at the Sand Point Airport were evaluated as one site. Petroleum contaminated soil was discovered during the removal of an underground storage tank at the ARFF building in 1999. Approximately 15 cubic yards of soil was excavated and stockpiled. In 2000, petroleum contaminated soil and groundwater



were identified near an above ground storage tank and former furnace at the SREB. Site characterization was conducted in 2006 to define the extent of soil and groundwater contamination remaining at the site. Samples collected from the stockpiles identified contaminant concentrations above cleanup levels. In a DEC decision document from 2006, conditional closure of the site was approved. Closure conditions included approval to land-spread the stockpiled soil in an unused portion of the facility to complete natural attenuation of contaminants. It is unknown where contaminated soil was spread, or if it contained PFAS (DEC, 2006).

### 1.1.2 Climate

Sand Point is located in the maritime climate zone. Characterized by high humidity, little temperature variation, frequent fog, persistent wind, and heavy precipitation. Annual precipitation averages around 47 inches. Periods of heaviest rainfall occur in December and September (USGS, 1995).

### 1.1.3 Vegetation

Vegetation in and around Sand Point is described as wet tundra. Sedge and grass mats are the dominant vegetation cover. Willow-alder thickets can be found in protected low-lying drainages (USGS, 1995).

### 1.1.4 Geology and Soils

Sand Point is located on Popof Island. Bedrock on Popof Island is composed of basaltic and andesitic lava flows of tertiary age with interbedded layers of volcanic ash and tuff. Surface exposures include shallow-marine and continental deposits rich in volcanic or plutonic detritus. On much of the island, particularly in low-lying areas, the unconsolidated surficial and shallow deposits consist of layers of ash and tuff (USGS, 1995).

Soils in the area are typically highly acidic, well-drained, dark soils derived from ash, till, and cinders. Poorly drained peat mats can be found in depressions (USGS, 1995).

### 1.1.5 Hydrology

Freshwater surface water in Sand Point include several small streams, a few small lakes and ponds, and a boggy area northeast of the airport. The largest stream near the SDP is Humboldt Creek that drains the upland bog to the north and west into the Humboldt Harbor (USGS, 1995). According to the City of Sand Point's 2020 Consumer Confidence Report, Humboldt Reservoir located on the southeast side of Sand Point serves as the surface water source for the public water supply. A review of the DEC Drinking Water

protection areas map shows this water source should not be influenced by activities at the SDP.

## 1.2 Project Objectives and Scope

The project objective is to evaluate the potential for human exposure to PFAS in WSWs at and near the SDP; and understand the extent of PFAS contamination, if present, resulting from the historic use of AFFF by the DOT&PF at the SDP. This Addendum describes methods used to identify PFAS and evaluate the lateral extent of contamination in WSWs at and near the SDP, where such wells exist. Refer to Section 2.3 for contaminants of potential concern (COPCs) and Exhibit 4-1 for proposed samples and analyses.

The scope of this initial WSW search and sampling effort includes:

- conducting a WSW search to confirm if groundwater is the source of drinking water near and downgradient of the SDP;
- sampling identified WSWs for PFAS, where access is provided, and
- discussing potential AFFF release sites at the SDP through interviews with airport personnel.

The proposed well search area for the WSW sampling event is presented in Figure 2.

## 2 SITE AND PROJECT DESCRIPTION

The following sections provide a site and project description.

### 2.1 Site Location and Boundaries

The SDP is located at 268 Airport Road in Sand Point, Alaska, approximately 3 miles from the city center of Sand Point. The SDP consists of a 5,213-foot by 150-foot asphalt runway. The geographic coordinates of the SDP terminal are latitude 55.3136 and longitude -160.5213. Sand Point is located on the northwestern portion of Popof Island in the east Aleutian Islands near the entrance to the Bering Sea.

### 2.2 Potential Sources of PFAS Contamination

General information regarding potential sources of contamination at DOT&PF sites to be covered under GWP is included in Section 2.1 of the GWP. Specific potential sources of contamination at the SDP are listed below:

- Three known AFFF release areas (Figure 2) where annual FAA certification testing of fire suppression systems and/or firefighting training events took place. Exact quantities of AFFF released are unknown due to various testing requirements the FAA inspector(s) outlined during certification or training events. Additionally, training event documentation was not required and available information on AFFF volumes and release frequency may not be representative.
- Potential leaks or spills from AFFF storage areas like the DOT&PF’s ARFF building.
- PFAS-contaminated material that was accepted for reuse following the treatment of the petroleum contamination. It is unknown where this material was reused at the site or if it contained PFAS.

### 2.3 Contaminants of Potential Concern and Regulatory Levels

General information regarding COPCs and regulatory levels is included in Section 2.2 of the GWP. The primary COPCs for this project are PFAS compounds, specifically PFOS and PFOA. DEC’s *Field Sampling Guidance* also identifies GRO, DRO, residual range organics, benzene, toluene, ethylbenzene, and xylenes, and polynuclear aromatic hydrocarbons as COPCs at ARFF training areas. However, we note this is outside the scope of this Addendum.

Groundwater samples will be compared to Alaska’s 18 Alaska Administrative Code (AAC) 75.341 Table C, Groundwater Human Health Cleanup Level and the DEC drinking water action level. The current cleanup levels and analytical reporting limits for the site COPCs are summarized below in Exhibit 2-1.

**Exhibit 2-1: COPCs, Regulatory and Laboratory Reporting Limits**

Method	Analyte	Regulatory Limit <sup>a</sup> (ng/L)	DEC Drinking Water Action Level (ng/L)	Laboratory RLs <sup>b</sup> (ng/L)
DoD QSM	PFOS	400	70	2.0
Table B-15 <sup>c</sup>	PFOA	400		2.0

Notes:

- 18 AAC 75 Table C. *Groundwater Cleanup Levels*.
- Current RLs from Eurofins TestAmerica, Inc. for PFAS analyses.
- All available PFAS analytes will be requested for analytical reports. However, only PFOS and PFOA have DEC Cleanup Levels and are reported in this table.

DEC = Department of Environmental Conservation, DoD = Department of Defense, ng/L = nanogram per liter, PFOA = perfluorooctanoic acid, PFOS = perfluorooctanesulfonic acid, QSM= Quality Systems Manual, RL = reporting limit

## 2.4 Conceptual Site Models

A conceptual site model (CSM) describes potential pathways between a contaminant source and possible receptors (i.e., people, animals, and plants) and is used to determine who may be at risk of exposure to those contaminants. A DEC *Human Health Conceptual Site Model Graphic Form* and a *Human Health Conceptual Site Model Scoping Form* were completed based on the preliminary understanding of site conditions. These forms are included in Appendix A of this Addendum.

Very little is known about potential PFAS-affected media at and beneath the SDP. The draft CSM will be revised and presented in the final report following the receipt of analytical data. Potentially affected media include contaminated soil, groundwater, surface water, sediment, and biota. Potential human exposure pathways include:

- Incidental soil ingestion;
- Dermal absorption of contaminants from soil, groundwater, or surface water;
- Inhalation of fugitive dust;
- Ingestion of groundwater (e.g., WSWs);
- Direct contact with sediment; and
- Ingestion of wild or farmed foods.

## 2.5 Project Team

Chris Darrah will be Shannon & Wilson's Principal-in-Charge and Kristen Freiburger will serve as the overall Statewide Project Manager. A site Project Manager will be selected if additional PFAS investigative efforts are needed following this first round of sampling. Shannon & Wilson's project team also includes other State of Alaska Qualified Environmental Professionals to support the various field and reporting tasks required to achieve the project objectives. The project team and their associated responsibilities are summarized in Exhibit 2-2 below.

**Exhibit 2-2: Project Team**

Affiliation	Responsibility	Representative	Contact Number
DOT&PF	Client – Regional POC	Spencer Gates	(907) 465-1787
	Client – Statewide PFAS POC	Sammy Cummings	(907) 888-5671
DEC	Regulatory agency POC	Bill O’Connell	(907) 269-3057
Shannon & Wilson	Principal-in-charge	Christopher Darrah	(907) 458-3143
	Statewide Project Manager	Kristen Freiburger	(907) 458-3146
	Project Manager	TBD	TBD
Eurofins/ TestAmerica, Inc.	PFAS analytical laboratory services	David Alltucker	(916) 374-4383

POC = point of contact

**2.6 Project Schedule and Submittals**

Section 2.5 of the GWP provides general information regarding project schedules (i.e., the general order of occurrence of site characterization activities) and associated submittals.

Once DEC approval is received for the proposed scope of services outlined in this Addendum, Shannon & Wilson will coordinate with DOT&PF staff to collect samples from WSWs at and near the SDP. Field activities are anticipated to occur during February 2023, weather permitting. Laboratory analysis will be requested on a standard 15-business-day turn-around time. Following receipt of the analytical results, we will provide DOT&PF and DEC with a map and table of the results. Results letters will also be prepared and mailed to the sampled WSW owner/user.

The following is the anticipated schedule:

- DEC comments addressed; approval received – January 2023
- Work Plan Implementation (field activities) – February 2023
- Analytical summary of data reported to DOT&PF and DEC – within two business days of data receipt
- Analytical data table and map reported to DOT&PF and DEC – within three business days of data receipt
- WSW owner/user notification of results – following delivery of results to DEC

Seasonal factors, including depth to groundwater and freezing conditions, may impact Shannon & Wilson’s ability to perform the field effort outlined in this document. We will inform DOT&PF regarding any scheduling changes.

## 3 WATER SUPPLY WELL SAMPLING ACTIVITIES

The following sections describe the WSW sampling activities to be conducted at and near the SDP. Sampling procedures and analytical methods are described in Section 4. A Quality Assurance Program Plan (QAPP) is included in Section 5. A Site Safety and Health Plan (SSHP) is provided as Appendix B. The proposed well search and sampling area is presented in Figure 2.

### 3.1 Water Supply Well Search and Sampling

General information regarding WSW search activities is described in Section 3.1 of the GWP.

A search of the Alaska Well Log Tracking System on October 25, 2022 identified one well on airport property. It is unknown if the well is used as a water supply or is a monitoring/test well. Prior to mobilization we will contact the DOT&PF leasing department to determine if additional wells are available for testing, or if they are used as a drinking water source. We note this is likely to provide useful information for the search area, since a majority of the search area includes airport property. We will also request information from the City of Sand Point regarding their water distribution system, specifically if the waterlines are piped to the airport property.

After reviewing available area maps and property-ownership records for Sand Point, where available, Shannon & Wilson will prepare detailed maps for the well search field effort. During our site visit, field staff will visit parcels in the well search area to identify structures that may use groundwater for drinking water (e.g., residences and public buildings). We will make a reasonable attempt to contact the owners or occupants to inquire about their water source and obtain permission to collect samples. Shannon & Wilson will collect PFAS samples from any identified WSWs in the search area for which permission to sample has been given by the owner(s) or occupant(s).

Where a well is discovered that is not connected to plumbing, a sample will be collected using a battery-operated peristaltic pump and new, PFAS-free silicone tubing. Samples will be collected following stabilization of parameters (pH, temperature, conductivity, dissolved oxygen, and redox potential). Groundwater parameters will be measured with a multiprobe water quality meter (YSI model 600XL or equivalent) to determine when sampling can begin. Parameters and stabilization criteria will be documents on a Monitoring Well Sampling Log (Appendix B of the GWP).

## 4 SAMPLING AND ANALYSIS PLAN

This section describes the analytical sampling approach for investigating PFAS contamination associated with the SDP. A DEC-qualified sampler will collect and handle the samples for projects covered under the GWP and this Addendum and collect required quality control (QC) samples in accordance with DEC’s *Field Sampling Guidance*. A general Sampling and Analysis Plan is included as Section 4 of the GWP. Sample containers, preservation methods, and holding times are included in Section 4.4. Sample custody, storage, and transport will be followed as described in Section 4.5. Investigative-derived waste (IDW) management is described in Section 4.7.

### 4.1 Analytical Sample Summary

An analytical sample summary is detailed in Exhibit 4-1 below. The number of groundwater samples is estimated based on the number of structures identified in the search area. We assume the public water utility is the prevalent water supply in Sand Point; however, due to the small number of structures identified near the SDP and the distance from the city center point we included each structure as a potential sample in the analytical sample summary detailed in Exhibit 4-1 below.

**Exhibit 4-1: Analytical Sample Summary**

Number of Samples	Matrix	PFAS (DOD QSM Table B-15 PFAS)
	Groundwater	12 + 2 DUPs

Notes:

DoD= Department of Defense; PFAS = per- and polyfluoroalkyl substances, QSM= quality systems manual

### 4.2 Special Considerations for PFAS Sampling

Special considerations for PFAS sampling are outlined in Section 4.10 of the GWP.

### 4.3 Analytical Laboratories and Methods

PFAS samples will be submitted to Eurofins Environmental Testing of West Sacramento, California. Based on the DEC Technical Memorandum issued on October 2, 2019, PFAS analysis will report the 18 approved PFAS compounds as listed in EPA 537 Modified Method that complies with the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 Table B-15. Upon receipt of the samples, authorized personnel will store

and prepare the samples for analysis, taking into consideration sample holding times for the analysis.

#### 4.4 Sample Containers, Preservation, and Holding Times

General information regarding sample containers, preservation, and holding times is described in Section 4.12 of the GWP. This information is provided in Exhibit 4-2, below, for the analytical methods employed for this project.

**Exhibit 4-2: Sample Containers, Preservation, and Holding Time Requirements**

Analyte	Method	Media	Container and Sample Volume	Preservation	Holding Time
PFAS	DoD QSM 5.3 Table B-15	Drinking Water	2 x 250 mL HDPE	0 °C to 6 °C	14 days to extraction, analyzed within 40 days of extraction

NOTES:

DoD = Department of Defense, PFAS = per- and polyfluoroalkyl substances, QSM = Quality Systems Manual

#### 4.5 Sample Custody, Storage, and Transport

Sample custody, storage, and transport procedures are described in Section 4.13 of the GWP.

#### 4.6 Equipment Decontamination

Equipment decontamination procedures are described in Section 4.14 of the GWP. We note that disposable sampling equipment is typically used to collect WSW samples and equipment decontamination is not likely to be needed for this project.

#### 4.7 Investigative Derived Waste Management

IDW will generally consist of purge water generated during WSW sampling. Purge water will be disposed of to the ground surface or using the septic disposal method utilized at the property. Where a submersible pump is used to collect a water sample from a well not connected to indoor plumbing, purge water will be filtered using a granulated activated carbon filter and then discharged to the ground surface.

#### 4.8 Deviations from the General Work Plan

No deviations to the GWP are planned at this time.



## 5 QUALITY ASSURANCE PROJECT PLAN

This QAPP is intended to guide activities during assessment and review of resulting data. Shannon & Wilson will be responsible for conducting data reduction, evaluation, and reporting under this QAPP. A general QAPP is provided as Section 5 of the GWP. Additionally, a Data-Validation Program Plan (DVPP), which describes the procedures for qualifying analytical data in a consistent manner, has been prepared and is included as Appendix C to the GWP. We note an updated DVPP was submitted to DEC in June 2022. The following sections describe specific procedures to be followed during sampling at the SDP so that sampling and documentation are effective, laboratory data are usable, and the information acquired is of high quality and reliable.

### 5.1 Quality Assurance Objectives

Data quality objectives are detailed in Section 5.1 of the GWP. Numeric QA objectives for this project are presented in Exhibit 5-1 below.

**Exhibit 5-1: Quality Assurance Objectives for Analytical Samples**

Analyte	Method	Matrix	Precision	Accuracy	Completeness
PFAS	DoD QSM 5.3 Table B-15	Water	±30%	(analyte dependent)	85%

NOTES:

PFAS = per- and polyfluoroalkyl substances

### 5.2 Field Documentation

Field documentation is described in Section 5.2 of the GWP. Field forms to be used for this project are included in Appendix B of the GWP.

### 5.3 Field Instrument Calibration

Field instrument calibration (e.g., YSI) is discussed in Section 5.3 of the GWP.

### 5.4 Field Quality Control Samples

The field quality assurance (QA)/QC program for this project includes the collection of the QA/QC samples described in the following sections.

#### 5.4.1 Field Duplicate Sample

Field duplicate sample collection procedures are described in Section 5.4.1 of the GWP. One field duplicate will be collected for every 10 primary samples. Refer to Exhibit 4-1 for the planned number of field duplicates.

#### 5.4.2 Equipment Blank Samples

Equipment blank sample collection procedures are described in Section 5.4.4 of the GWP. We note it is unlikely equipment blanks will be needed for WSW sampling.

#### 5.4.3 Temperature Blank Samples

Temperature blanks are described in Section 5.4.6 of the GWP.

### 5.5 Laboratory Quality Control Samples

Laboratory quality control samples are described in Section 5.5 of the GWP.

### 5.6 Laboratory Data Deliverables

Laboratory data deliverables are described in Section 5.6 of the GWP.

### 5.7 Data Reduction, Evaluation, and Reporting

Data reduction, evaluation, and reporting requirements are discussed in Section 5.7 of the GWP.

## 6 REFERENCES

- Alaska Department of Environmental Conservation (DEC), 2006, Decision Document; ADOT&PF ARFF & SRE Building, Sand Point Airport, Conditional Closure Determination. Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, August 08.
- Alaska Department of Environmental Conservation (DEC), 2017, Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites: Juneau, Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, March, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).
- Alaska Department of Environmental Conservation (DEC), 2022a, Field Sampling Guidance for Contaminated Sites and Leaking Underground Storage Tanks: Juneau, Alaska, DEC Division of Spill Prevention and Response, Contaminated Sites Program, October, available:  
[http://dec.alaska.gov/spar/csp/guidance\\_forms/csguidance.htm](http://dec.alaska.gov/spar/csp/guidance_forms/csguidance.htm).
- Alaska Department of Environmental Conservation (DEC), 2021, 18 AAC 75.345, Groundwater Cleanup Levels: Juneau, Alaska, Alaska Administrative Code (AAC), Title 18, Chapter 75, Section 341, January, available:  
<http://dec.alaska.gov/commish/regulations/>.
- Shannon & Wilson, 2022, Data-Validation Program Plan, DOT&PF Statewide PFAS, Various Sites, Alaska, July.
- United States Geological Survey, 1995, Overview of Environmental and Hydrogeologic Conditions near Sand Point, Alaska: Prepared by James R. Cowan and the Federal Aviation Administration, open-file report 95-408.



Path: T:\GIS\Projects\Statewide PFAS\Sand Point\Vicinity Map\_Sand Point.mxd Author: User: TKG Date: 9/15/2022

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



January 2023  
**VICINITY MAP**  
Figure 1



Path: T:\GIS Projects\Statewide PFAS\Sand Point\Site Map\_Sand Point.mxd - Author: User:KRF Date: 1/11/2023

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



- Notes:
1. AFFF: Aqueous Film Forming Foam
  2. Search area is approximate

January 2023  
**SITE MAP**  
**Figure 2**

Appendix A

# Conceptual Site Model

Scoping and Graphics Forms

## CONTENTS

- Human Health Conceptual Site Model Scoping Form
- Human Health Conceptual Site Model Graphic Form

# Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

**Site Name:**

**File Number:**

**Completed by:**

### Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

*General Instructions: Follow the italicized instructions in each section below.*

### 1. General Information:

**Sources** *(check potential sources at the site)*

- |  |   |
|--|---|
| <input type="checkbox"/> USTs                          | <input type="checkbox"/> Vehicles   |
| <input type="checkbox"/> ASTs                          | <input type="checkbox"/> Landfills  |
| <input type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers   |
| <input type="checkbox"/> Drums                         | <input checked="" type="checkbox"/> Other: <input type="text" value="Aqueous Film Forming Foam (AFFF) releases"/> |

**Release Mechanisms** *(check potential release mechanisms at the site)*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Spills | <input checked="" type="checkbox"/> Direct discharge |
| <input checked="" type="checkbox"/> Leaks  | <input type="checkbox"/> Burning                     |
|  | <input type="checkbox"/> Other: <input type="text"/> |

**Impacted Media** *(check potentially-impacted media at the site)*

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface soil (0-2 feet bgs*)  | <input checked="" type="checkbox"/> Groundwater      |
| <input checked="" type="checkbox"/> Subsurface soil (>2 feet bgs) | <input checked="" type="checkbox"/> Surface water    |
| <input type="checkbox"/> Air                                      | <input checked="" type="checkbox"/> Biota            |
| <input checked="" type="checkbox"/> Sediment                      | <input type="checkbox"/> Other: <input type="text"/> |

**Receptors** *(check receptors that could be affected by contamination at the site)*

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Residents (adult or child)                      | <input checked="" type="checkbox"/> Site visitor      |
| <input checked="" type="checkbox"/> Commercial or industrial worker                 | <input checked="" type="checkbox"/> Trespasser        |
| <input checked="" type="checkbox"/> Construction worker                             | <input checked="" type="checkbox"/> Recreational user |
| <input checked="" type="checkbox"/> Subsistence harvester (i.e. gathers wild foods) | <input checked="" type="checkbox"/> Farmer            |
| <input checked="" type="checkbox"/> Subsistence consumer (i.e. eats wild foods)     | <input type="checkbox"/> Other: <input type="text"/>  |

\* bgs - below ground surface

**2. Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

*If the box is checked, label this pathway complete:*

Complete

Comments:

No surface soil samples have been collected at the SDP. However, AFFF releases to the ground surface could cause soil contamination.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

No surface soil samples have been collected at the SDP. However, AFFF releases to the ground surface could cause soil contamination.

According to the Alaska Department of Health and Social Services, PFOS and PFOA are not appreciably

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

No water supply well samples have been collected at or downgradient of the SDP. However, PFAS contaminated groundwater is possible.



## 2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

## 3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)

*If all of the boxes are checked, label this pathway complete:*

Complete

Comments:

### c) Inhalation-

#### 1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Are the contaminants in soil volatile (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

PFAS are not included in Appendix D. If volatile organic compounds are reported during site characterization activities, this section will be updated with the new information.

## 2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

See comments for 3.c.1.

**3. Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

**Dermal Exposure to Contaminants in Groundwater and Surface Water**

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

*Check the box if further evaluation of this pathway is needed:*



Comments:

According to the Alaska Department of Health and Social Services, PFOS and PFOA are not appreciably absorbed through the skin. However, Appendix B of the 2017 Guidance on Developing Conceptual Site Models lists both PFOS and PFOA. We consider dermal exposure to these compounds to be insignificant for the purposes of this CSM.

**Inhalation of Volatile Compounds in Tap Water**

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

*Check the box if further evaluation of this pathway is needed:*



Comments:

PFAS are not included in Appendix D.

## Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM<sub>10</sub>). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

*Check the box if further evaluation of this pathway is needed:*



Comments:

No surface soil samples have been collected at the SDP. However, AFFF was likely released to the ground surface on the lightly graveled runways that can be dusty in the summertime.

## Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

*Check the box if further evaluation of this pathway is needed:*



Comments:

No sediment samples have been collected at the SDP. However, AFFF was likely release to the ground surface in unpaved and/or lightly graveled areas open to DOT&PF employees and the public. Additionally, local residents use subsistence practices (e.g., berry picking and fishing) that may expose them to sediment.

**4. Other Comments** *(Provide other comments as necessary to support the information provided in this form.)*

This initial CSM will be revised following the receipt of analytical data.

# HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: ADOT&PF Sand Point Airport Sitewide PFAS

Completed By: Kristen Freiburger, Shannon & Wilson, Inc.

Date Completed: January 2023

**Instructions:** Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Media	(2) Transport Mechanisms
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i>
	<input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i>
	<input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i>
	<input checked="" type="checkbox"/> Volatilization <i>check air</i>
	<input checked="" type="checkbox"/> Runoff or erosion <i>check surface water</i>
	<input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i>
<input type="checkbox"/> Other (list): _____	
<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i>
	<input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i>
	<input type="checkbox"/> Volatilization <i>check air</i>
	<input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i>
<input type="checkbox"/> Other (list): _____	
<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i>
	<input type="checkbox"/> Volatilization <i>check air</i>
	<input type="checkbox"/> Flow to surface water body <i>check surface water</i>
	<input type="checkbox"/> Flow to sediment <i>check sediment</i>
	<input type="checkbox"/> Uptake by plants or animals <i>check biota</i>
<input type="checkbox"/> Other (list): _____	
<input checked="" type="checkbox"/> Surface Water	<input checked="" type="checkbox"/> Direct release to surface water <i>check surface water</i>
	<input type="checkbox"/> Volatilization <i>check air</i>
	<input checked="" type="checkbox"/> Sedimentation <i>check sediment</i>
	<input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i>
<input type="checkbox"/> Other (list): _____	
<input checked="" type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Direct release to sediment <i>check sediment</i>
	<input checked="" type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i>
	<input checked="" type="checkbox"/> Uptake by plants or animals <i>check biota</i>
<input type="checkbox"/> Other (list): _____	

(3) Exposure Media	(4) Exposure Pathway/Route	(5) Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or harvesters	Subsistence consumers	Other
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input checked="" type="checkbox"/> Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F	C/F	C/F	
<input checked="" type="checkbox"/> groundwater	<input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F	C/F	C/F	
<input type="checkbox"/> air	<input type="checkbox"/> Inhalation of Outdoor Air <input type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust							
<input checked="" type="checkbox"/> surface water	<input type="checkbox"/> Ingestion of Surface Water <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input checked="" type="checkbox"/> sediment	<input checked="" type="checkbox"/> Direct Contact with Sediment	C/F	C/F	C/F	C/F	C/F	C/F	
<input checked="" type="checkbox"/> biota	<input checked="" type="checkbox"/> Ingestion of Wild or Farmed Foods	C/F	C/F	C/F	C/F	C/F	C/F	

Appendix B

# Site Safety and Health Plan

## CONTENTS

- B.1. Site Hazard Analysis ..... 1
  - B.1.1 Chemical-Exposure Hazards ..... 1
  - B.1.2 Physical Hazards ..... 1
    - B.1.2.1 Temperature Stress ..... 2
    - B.1.2.2 Lifting Hazards ..... 2
    - B.1.2.3 Slips, Trips, and Falls ..... 2
    - B.1.2.4 Insects and Animals ..... 2
    - B.1.2.5 Congested Areas ..... 3
  - B.1.3 Other Hazards ..... 3
- B.2. Personal Responsibilities, Training, and Medical Surveillance ..... 3
  - B.2.1 Assignment of Responsibilities ..... 3
  - B.2.2 Personal Training ..... 4
  - B.2.3 Medical Surveillance Program ..... 4
- B.3. Personal Protective Equipment ..... 4
- B.4. Decontamination Procedures ..... 5
- B.5. Accidents and Emergencies ..... 5
- B.6. General Site Safety Requirements ..... 7

## SITE SAFETY AND HEALTH PLAN

Shannon & Wilson prepared this Site Safety and Health Plan (SSHP) for the water supply well (WSW) well search and sampling activities at and near the Sand Point Airport (SDP). The purpose of this SSHP is to protect the health and safety of field personnel from physical and chemical hazards associated with work at this site.

The provisions of this plan apply to Shannon & Wilson personnel who will potentially be exposed to safety and/or health hazards during this investigation. Shannon & Wilson employees are covered under its Corporate Safety and Health Program. General safety and health requirements described in that program will be met. Each Shannon & Wilson employee on the site will complete the personal acknowledgement form documenting they have read and understand this SSHP and agree to abide by its requirements. A copy of this SSHP will be kept on-site throughout the duration of sampling operations.

### B.1. SITE HAZARD ANALYSIS

There are two categories of hazards that may occur during the field work: potential chemical exposure hazards and physical hazards associated with site characterization activities. These hazards are discussed below.

#### B.1.1 Chemical-Exposure Hazards

Contaminated water may be encountered during site exploration activities. PFAS are believed to be the primary contaminants of potential concern and may be encountered in water at unknown concentrations.

Shannon & Wilson personnel will implement skin protection when they are to contact potentially contaminated soil or water. Field personnel will wear work gloves or nitrile gloves as needed. Field personnel will not require respiratory protection based on the current understanding of site conditions and scope of services.

#### B.1.2 Physical Hazards

Primary physical hazards associated with site characterization activities include temperature stress; lifting, slipping, tripping, falling; and risk of eye injuries. In addition, wildlife may be a hazard in forested areas around the airport. The best means of protection against accidents related to physical hazards are careful control of equipment activities in



the planned work area and use of experienced and safety- and health-trained field personnel.

Field personnel will not enter confined spaces for site characterization activities, nor will they enter trenches or excavations greater than four feet in depth.

#### B.1.2.1 Temperature Stress

Wearing personal protective equipment (PPE) may put a worker at risk of developing heat stress; however, since the field work will be conducted during cooler months the risk of heat stress is considered low. Cold stress or injury due to hypothermia will be guarded against by wearing appropriate clothing, having warm shelter available, scheduling rest periods, adequate hydration, and self-monitoring physical and mental conditions.

#### B.1.2.2 Lifting Hazards

Moving coolers of water samples or other heavy objects presents a lifting hazard. Personnel will use proper lifting techniques and obtain assistance when lifting objects weighing more than 40 pounds.

#### B.1.2.3 Slips, Trips, and Falls

The most common hazards on a job site are typically slips, trips, and falls. These hazards will be reduced through the following practices:

- Personnel will stay alert.
- All access-ways will be kept free of materials, supplies, and obstructions at all times.
- Tools and other materials will be located so as not to cause tripping or other hazards.
- Personnel should be aware of potential tripping hazards associated with vegetation, debris, and uneven ground.
- Personnel should be aware of limitations imposed by work clothing and PPE.

The project site may be inherently hazardous due to the potential presence of rain, snow, and ice, which can alter the character of the ground surface. The risk for slips, trips, and falls by site workers is increased due to wet or icy surfaces; therefore, workers will use caution when walking at the site.

#### B.1.2.4 Insects and Animals

During the summer months in Alaska, mosquitoes and other insects are common in areas predominantly covered with vegetation. Wearing PPE should be sufficient to protect site

workers. Animals such as moose and bears are also commonly seen in Alaska. If a large animal approaches the site, workers should keep their distance or seek shelter in their vehicles.

#### B.1.2.5 Congested Areas

The site investigation may at times require field personnel to work adjacent to or in roadways. Field personnel will observe the speed and frequency of traffic proximal to the work site. Appropriate cones, barricades, or signs to secure the work area will be used when required.

#### B.1.3 Other Hazards

Biological, ionizing radiation, and other hazards are not expected to be present. However, be aware of the surroundings and maintain safe work practices in accordance with Shannon & Wilson's Corporate Health & Safety Plan.

## B.2. PERSONAL RESPONSIBILITIES, TRAINING, AND MEDICAL SURVEILLANCE

Below is a summary of the assignment of responsibilities, training requirements, and medical surveillance information for Shannon & Wilson personnel.

#### B.2.1 Assignment of Responsibilities

Shannon & Wilson is responsible for understanding and complying with the requirements of this SSHP. Following is a list of responsibilities of all Shannon & Wilson personnel working on the site:

- Review and follow this SSHP.
- Attend and participate in safety meetings.
- Take appropriate action as described in this SSHP regarding accidents, fires, or other emergency situations.
- Take all reasonable precautions to prevent injury to themselves and their fellow workers.
- Perform only those tasks they believe they can do safely, and immediately report any accidents or unsafe conditions to Shannon & Wilson's Project Manager or Office Health and Safety Manager.
- Halt work, by themselves or by others, when they observe an unsafe act or potentially unsafe working condition.

- Report accidents, illnesses, and near-misses to the local contact and to Shannon & Wilson's Fairbanks office Health and Safety Manager.

### B.2.2 Personal Training

Shannon & Wilson personnel performing activities on this site and under this plan have completed the appropriate training requirements specified in 29 CFR 1910.120(e). Each individual has completed an annual eight-hour refresher-training course and/or initial 40-hour training course within the last year.

A personal acknowledgement form will be completed by field personnel prior to commencing field activities. This acknowledgment form will document that they have read and understand this SSHP.

### B.2.3 Medical Surveillance Program

All field personnel performing activities on this site covered by this SSHP have undergone baseline and annual physical/medical examinations as part of Shannon & Wilson's Corporate Health and Safety Program. All field personnel are active participants in Shannon & Wilson's Medical Monitoring Program or in a similar program, which complies with 29 CFR 1910.120(f).

## B.3. PERSONAL PROTECTIVE EQUIPMENT

PPE will be required during the course of the field work. PPE selection will be based primarily on work-task requirements and potential exposure. Personnel may wear the following, depending on the area of sampling:

- standard work clothes;
- reflective, high-visibility safety vest;
- safety-toe boots;
- safety glasses;
- hearing protection;
- gloves; and,
- hard hat.

Disposable nitrile gloves will be worn during any activity that may require dermal contact with potentially contaminated media.

## B.4. DECONTAMINATION PROCEDURES

Equipment decontamination procedures are necessary for any reusable equipment that comes into contact with contaminated soil and/or water. Decontamination procedures will consist of a rinse with non-phosphate-based detergent, a second rinse with plain tap water, and a final rinse with distilled water. Sampling equipment and PPE that is expendable will be disposed of at the site or in a landfill off-site.

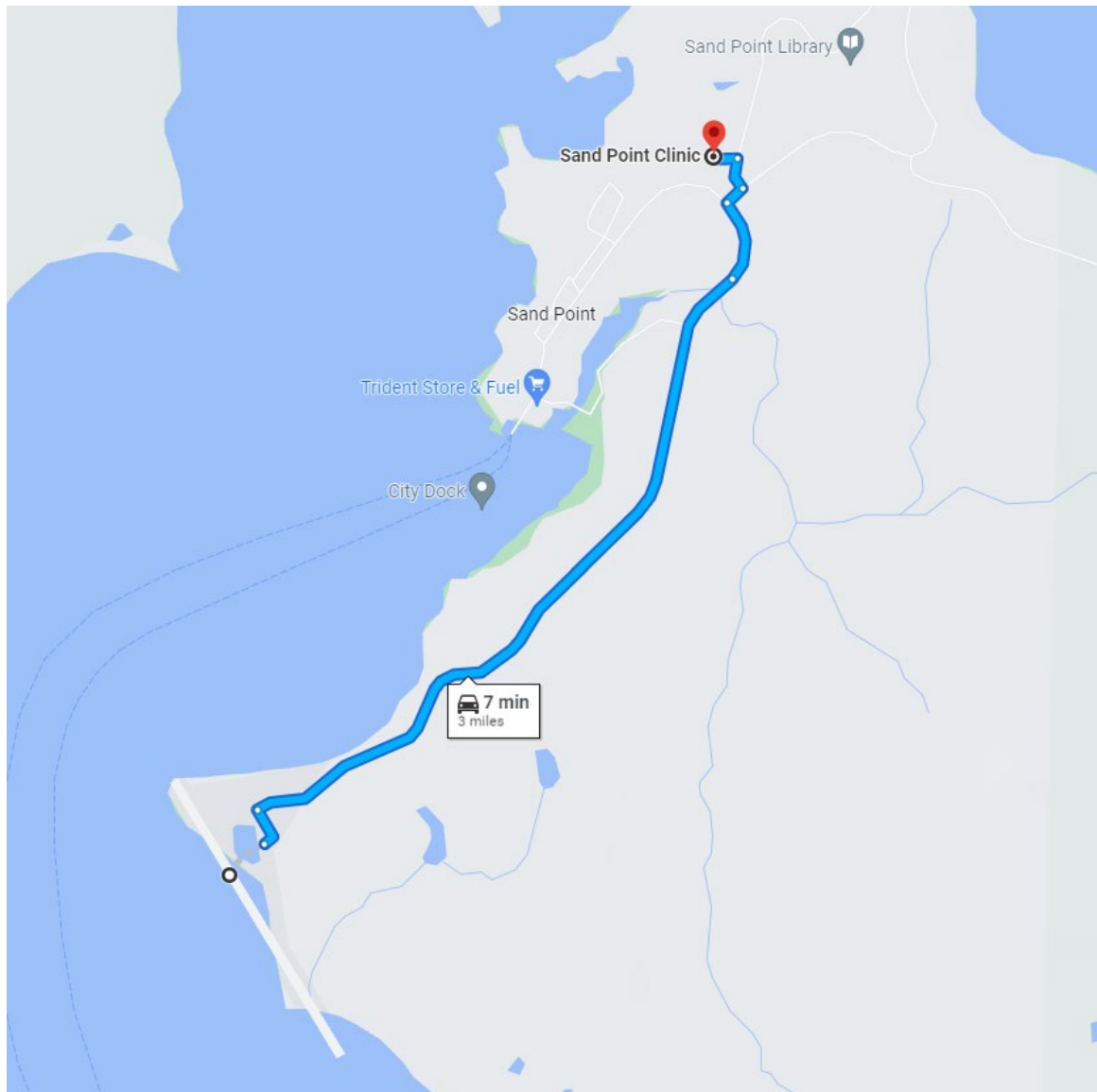
Shannon & Wilson will conduct all site characterization activities in Level D PPE. For this reason, personnel will not be decontaminated when leaving the work site unless gross visual contamination of protective clothing is present.

## B.5. ACCIDENTS AND EMERGENCIES

Shannon & Wilson field personnel are current in first aid and cardiopulmonary resuscitation (CPR) training. At a minimum, the following site safety equipment and first aid supplies shall be available in the field:

- PPE and clothing specialized for known site hazards;
- first aid kit, including first aid booklet;
- portable eye wash;
- clean water in portable containers; and
- other decontamination supplies.

The primary emphasis of any health and safety plan is accident prevention. If an injury or illness occurs during the course of field work, the severity of the problem will dictate the level of response. Minor injuries or illness will be addressed with basic first aid measures as recommended by a registered nurse through Shannon & Wilson's corporate Medcor service (1-800-775-5866). More serious injuries will require assistance from the medical staff at the Sand Point Clinic located at 2200 James St, Sand Point, Alaska. The telephone number for the Clinic is (907) 837-2208 and the hours of operation are 9 a.m. to 3 p.m. Field phones will be kept easily accessible in the case of an emergency.

**Exhibit B-1: Sand Point Clinic**

Shannon & Wilson's Corporate Health and Safety Program requires accident reporting when there is a site-related accident, near-miss incident, or medical emergency. If an employee is treated by medical personnel, the medical attendant will complete an Incident Medical Treatment Documentation form. Completion of an Alaska Department of Labor Report of Occupational Injury or Illness is also required within 10 days for any work-related injury or illness.

## B.6. GENERAL SITE SAFETY REQUIREMENTS

The following measures are designed to augment the specific health and safety guidelines provided in this plan:

- Field personnel should avoid contact with potentially contaminated surfaces such as: walking through puddles or pools of liquid; kneeling on the ground; or leaning, sitting, or placing equipment on contaminated soil or containers.
- Field personnel will be familiar with procedures for initiating an emergency response.
- Hazard assessment is a continual process; personnel must be aware of their surroundings and any chemical/physical hazards present.
- Personnel in the exclusion area shall be the minimum number necessary to perform work tasks in a safe and efficient manner.
- The use of contact lenses is prohibited; soft lenses may absorb irritants, and all lenses concentrate irritants.
- Equipment contacting potentially contaminated soil or water must be decontaminated or properly discarded before leaving the site.

Field personnel will be familiar with the physical characteristics of the work site including wind direction, site access, and location of communication devices and safety equipment.

## SITE SAFETY AND HEALTH PLAN PERSONAL ACKNOWLEDGEMENT FORM

DOT&PF STATEWIDE GENERAL WORK PLAN  
ADDENDUM 024-SDP-01: SAND POINT WATER SUPPLY WELL SAMPLING

I have reviewed this document and understand its contents and requirements. A copy of the above-referenced document has been made available to me. I agree to abide by the requirements of this Site Safety and Health Plan.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name (printed)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Representing

**IMPORTANT INFORMATION**

# Important Information

About Your Geotechnical/Environmental Report



## CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

## THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

## SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

## MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent

such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

#### A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

#### THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

#### BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

**READ RESPONSIBILITY CLAUSES CLOSELY.**

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

**The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland**