## APPENDIX C

## Wetlands and Waters Delineation Report



Wetlands and Waters Delineation Report

#### Seldon Road Extension Phase II

CFHWY00562

August 12, 2022

Prepared for:



Alaska Department of Transportation and Public Facilities

4111 Aviation Avenue Anchorage, AK 99519

Prepared by:

Stantec Consulting Services Inc. 725 East Fireweed Lane Suite 200 Anchorage, AK 99503-2245

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Prepared by	- In from
Zach Baer, PWS	1
	Q (-1
Reviewed by	01-0201-

the Rome Approved by

Victor Ross

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### **Executive Summary**

The Alaska Department of Transportation and Public Facilities required professional services to develop a Wetland and Waters Delineation Report for the Seldon Road Extension Phase II project.

This 2022 report presents the findings of the baseline (current existing conditions) fieldwork for the proposed project footprint plus a 100-foot buffer. This includes the extent of Wetlands and Waters within the study area.

The study area is located in Meadow Lakes, Alaska. The community is located approximately 4 miles west of Wasilla, Alaska and is within the Matanuska-Susitna Borough. Streams and wetlands in the study area are hydrologically connected downstream to Big Lake, which is a Traditional Navigable Water (USACE 2022).

The 2022 study area mapping is based on the criteria in the U.S. Army Corps of Engineers Wetland Delineation Manual (USACE 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) (USACE 2007), and the 2020 National Wetland Plant List (USACE 2020a).

Status	Acres	Percent of Study Area
Wetlands	15.02	14.4
Waters	0.05	<0.1
Total Wetlands and Waters	15.07	14.4
Uplands	89.38	85.6
Total	104.44	100.0

#### **Study Area Wetlands and Waters**

Wetlands account for 15.02 acres (14.4%) of the study area. The majority of wetlands were classified in the Cowardin system (Cowardin et al. 1979) as Deciduous Shrub (33.2 percent of Wetlands and Waters), Coniferous Scrub (21.6 percent of Wetlands and Waters), or Coniferous Forest (20.9 percent of Wetlands and Waters). Slope Hydrogeomorphic wetlands were the dominant wetland classification observed within the study area, with Depressional and Riverine types also observed.

Three streams were found within the study area, accounting for 0.05 acres (<0.1%) of the study area. The total stream length within the study area is 756 feet, or 0.14 miles.

## Abbreviations

2007 Supplement	Regional Supplement to the Corps of Engineers Wetland
AKEPIC	Delineation Manual: Alaska Region, 2007 Supplement Version 2.0 Alaska Exotic Plants Information Clearinghouse
APT	Antecedent Precipitation Tool
CIW	Cook Inlet Wetlands Project
EPA	Environmental Protection Agency
FVP	Field Verification Point
GPS	Global Positioning System
HGM	Hydrogeomorphic Classification
HUC	hydrologic unit code
MLRA	Major Land Resource Area
NHD	National Hydrography Dataset
NRCS	National Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
RPW	Relatively Permanent Waters
SC	Stream Crossing
SPN	Special Public Notice
Stantec	Stantec Consulting Services Inc.
TNW	Traditionally Navigable Waters
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WB	Waterbody
WD	Wetland Determination

Introduction

## 1.0 INTRODUCTION

The Alaska Department of Transportation & Public Facilities Central Region is proposing to extend Seldon Road to the west, from North Windy Bottom Road to Pittman Road. Baseline (current existing conditions) fieldwork for the project footprint plus a 100-foot buffer (study area) was conducted in 2022 to determine the extent of Wetlands and Waters.

Field data were collected in June 2022 by Stantec Consulting Services Inc. (Stantec). The field data collected was used in conjunction with topographical base maps, aerial photography, and other data sources to produce the figures and findings presented in this report.

Stantec verifies the evaluation and collection of field data, wetland determinations, and the resulting digital maps and figures were performed in accordance with guidance provided in the U.S. Corps of Engineers (USACE) *Wetland Delineation 1987 Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region, 2007 Supplement Version 2.0* [2007 Supplement] (USACE 2007). The report and figures meet the standards prescribed in USACE Special Public Notice (SPN) 2020-00399: Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2020b). Plant species reporting and analyses were completed using the 2020 National Wetlands Plant List (USACE 2020a).

### 1.1 STUDY AREA LOCATION

The western boundary of the study area begins near Meadow Lakes Elementary School in the Matanuska-Sustina Borough at latitude 61.6120° N, longitude 149.6247° W. The eastern boundary of the study area is near the western end of the Seldon Road Extension Phase 1 project at the intersection of Seldon Road and North Windy Bottom Road at latitude 61.6154° N, longitude 149.5585° W (Figure 1).

The study area can be found on the Anchorage 1:250,000 U.S. Geological Survey (USGS) quadrangle map and the Anchorage C-7 1:63,360 quadrangle maps. The project is within the Seward Meridian and crosses 4 Public Land Survey System sections. The complete Township Range and Section list is shown in Table 1.

Table T Study Alea Location						
Meridian Township		Range	Section			
Seward	18N	2W	25, 26, 27, 34			

### **Table 1 Study Area Location**





#### Study Area

Public Land Survey Section (Seward Meridian, T 18N, R 2W)



#### Client

AK Dept. of Transportation & Public Facilities

Project

Seldon Road Extension Phase II

Figure

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Location

Figure Number **1** 



Existing Data and Methodology

## 2.0 EXISTING DATA AND METHODOLOGY

### 2.1 EXISTING DATA

Sources of existing data used in developing baseline environmental data include: Cook Inlet Wetlands (CIW) mapping data, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Department of Agriculture (USDA) ecoregion and soil survey information, USGS project watersheds and stream data, local climate data, and USFWS and Alaska Department of Fish and Game fish and wildlife data.

### 2.1.1 Cook Inlet Wetlands

The study area intersects 29.0 acres of wetlands mapped by the CIW project (Table 2). This mapping was conducted at a scale of 1:18,000 in the NAD83 State Plane Alaska 4 projection using aerial imagery collected in 2011. CIW mapping is shown on Figure 2.

Wetland Type	Acres	Percent Study Area
Discharge Slope	11.0	37.9
Drainageway	0.3	1.0
Kettle	7.0	24.1
Riverine	6.0	20.7
Spring Fen	0.1	0.3
VLD Trough	4.7	16.2
Total	29.0	100.0

### **Table 2 Cook Inlet Wetlands Mapping**

\*Apparent inconsistencies in sums are the results of rounding.

### 2.1.2 National Wetland Inventory

The NWI on-line Wetlands Mapper shows the study area is covered by digital NWI data in NAD83 Albers projection (USFWS 2022a). The area was mapped using 1996 True Color imagery at a scale of 1:24,000. The NWI mapping is offset from Cook Inlet Wetlands mapping and current aerial imagery, most likely due to projection issues with the imagery used by USFWS.

The NWI shows wetlands occupying low-lying areas situated within the study area. Wetlands and Waters types include forested/shrub wetlands, emergent wetlands, streams, and the edge of one lake, and total 27.7 percent of the study area. Figure 2 shows the NWI coverage of the study area. Table 3 lists acres of NWI Wetlands and Waters mapped in the study area.

Existing Data and Methodology

NWI Group	NWI Code	Acres	Percent Study Area
Wetlands			
	PFO4B	1.3	1.2
Freshwater Forested/Shrub	PSS1/4B	6.9	6.6
T Orested/Ornab	PSS4/1B	17.1	16.3
	PEM1/SS1B	0.5	0.5
Freshwater	PEM1/SS1C	3.1	2.9
Lineigen	PEM1F	0.2	0.2
Wetlands Total		28.9	27.7
Waters			
Riverine	R5UBH	0.6	0.6
Lake	L2AB3H	0.2	0.2
Waters Total	-	0.8	0.8
Wetlands and Wa	iters Total	29.7	28.5
Uplands	U	74.7	71.5
Total	·	104.4	100.0

### Table 3 National Wetland Inventory Mapping

\*Apparent inconsistencies in sums are the results of rounding.





### Study Area

···· NHD Flowline

### **NWI Wetland Type**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake

#### **Cook Inlet Wetland Type**

Discharge Slope  $\sim$ Spring Fen  $\sim$ VLD Trough Floating Island Riverine Depression Kettle Lake Drainageway



Figure Number 2



Existing Data and Methodology

### 2.1.3 Major Land Resource Area

The study area is located within the 6.8 million-acre Cook Inlet Lowlands Major Land Resource Area (MLRA; USDA 2006). This MLRA is a broad expanse of gently sloping to rolling plains and low- or moderate-relief hills bordered by the surrounding mountains. Small and medium sized lakes are scattered throughout the part of the MLRA covering the study area. The waters of the MLRA drain to Cook Inlet.

Annual precipitation ranges from 15 to 60 inches, with a climate considered transitional from temperate maritime to subarctic continental (USDA 2006).

Uplands are dominated by white spruce, paper birch, and quaking aspen. Cottonwood are common on flood plains and in seepage areas. Lowlands and areas of peat support stunted spruce, low scrub, and sedge and grass meadows (USDA 2006).

### 2.1.4 Watersheds

The study area is within one USGS hydrologic unit code (HUC) 10 watershed, Fish Creek (1902040105), and one HUC 12 watershed, Meadow Creek (190204010502) (USGS 2022). The study area watersheds are shown in Figure 2. Hydrologically, water in these watersheds flow via surface and groundwater connections to Big Lake.

### 2.1.5 Rivers and Streams

USACE Special Public Notice (SPN) 2020-00339 Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2020b) superseded 2010 guidance (USACE 2010). However, in 2021 the Environmental Protection Agency (EPA) published guidance directing use of pre-2015 Waters of the U.S. instructions (EPA 2021). Therefore, to classify study area streams, this report refers to SPN 2010-45 (USACE 2010).

In the Alaska District SPN 2010-45, USACE asks for data (optional) describing the various tributaries (streams) flowing from or through the project study area, and their connections to traditionally navigable waters downstream. The USACE is responsible for determining the jurisdiction of Waters of the U.S. (wetlands, streams, rivers, lakes), by reviewing connections to downstream navigable waters (USACE 2010).

### Traditionally Navigable Waters

Traditionally Navigable Waters (TNW) are defined in SPN 2010-45 as those "...waters which are currently used or were used in the past or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide."

The USACE Alaska District lists the Navigable Waters in Alaska (USACE 1995). Streams running through the study area connect downstream to Big Lake, a TNW.

Existing Data and Methodology

### **Relatively Permanent Waters**

In addition to identifying TNWs in the project area, non-navigable streams (Relatively Permanent Waters [RPW]) also need to be identified. Non-navigable streams are classified by USACE (2010) in three ways:

<u>Relatively Permanent Non-Navigable Tributaries of Traditional Navigable Waters (Perennial RPW):</u> Non-navigable waters typically flowing year-round or waters having a continuous flow at least seasonally (typically three months). Perennial RPW do not include ephemeral tributaries which flow only in response to precipitation and intermittent streams which do not typically flow year-round or have continuous flow at least seasonally.

<u>Seasonal Relatively Permanent Waters (Seasonal RPW)</u>: Non-navigable, seasonal RPW—intermittent streams which do not typically flow year-round or have continuous flow at least seasonally.

<u>Non-Relatively Permanent Waters (Non-RPW)</u>: Non-navigable tributaries that do not typically flow yearround or do not have continuous flow at least seasonally.

### National Hydrography Dataset

The USGS National Hydrography Dataset (NHD; USGS 2022) catalogs two unnamed perennial streams that flow through the study area near the crossing of Wyoming Drive (Figure 2).

### 2.1.6 Soil Survey

The Soil Survey of Matanuska-Susitna Valley Area, Alaska (USDA 1998) covers 1.5 million acres in the Matanuska-Susitna Borough. Table 4 lists the map units in the study area and their estimated hydric soils percentage. Two soil map units within the study area are considered to have 90% components with hydric soils. These two map units generally align with the NWI-mapped wetland areas within the study area. Six additional map units occur in the study area and have between four % and six % components with hydric soils. Figure 3 shows the soil map units around the study area.

Existing Data and Methodology

### Table 4 Soil Survey

Map Unit Name	Map Unit	Acres	Percent of Study Area	Percent Hydric Components
Cryaquepts, depressional, 0 to 7 percent slopes	116	25.8	24.7	90
Cryods, low elevation, and Cryochrepts, 30 to 70 percent slopes	120	0.5	0.5	5
Deception silt loam, rolling	122	0.4	0.4	4
Estelle silt loam, rolling	131	9.5	9.1	4
Histosols	141	7.7	7.4	90
Kichatna silt loam, 0 to 3 percent slopes	151	2.3	2.2	6
Kichatna silt loam, sloping and moderately steep	152	20.0	19.2	6
Kichatna silt loam, undulating	154	38.4	36.8	4
	Total	104.4	100.0	

\*Apparent inconsistencies in sums are the results of rounding





#### Study Area

Soil Map Unit Percent Hydric (labled by Map Unit Number)

- 🧾 4% hydric
- 5% hydric

6% hydric

90% hydric





Soils Mapping

Figure Number

3



Existing Data and Methodology

### 2.1.7 Climate Data

The growing season for this area begins May 8 and ends October 5 (USACE 2007).

Precipitation data leading to 2022 field work is listed in Table 5. The weather conditions preceding the field investigations were considered during onsite determinations. Normal precipitation is based on 1991-2020 records for Matanuska Experimental Farm, Alaska (NOAA 2022). Field work was conducted June 9 and 10, 2022. Winter precipitation preceding field work was high. October 2021, December 2021, and February 2022 were all above climate normal ranges, while November 2021, January 2022, and March 2022 were within climate normal range. Precipitation in April and May 2022 was within climate normal ranges, but at the lower end of that range. Precipitation for the water year, starting October 2021, through June 2022, was 124 percent of normal (Table 5).

Month	A Total Monthly M Accumulated A Precipitation P (Inches) 1 (I	Average Monthly Accumulated Precipitation 1991-2020 (Inches)	Percent of Average Precipitation	30% Chance Precipitation	
				Less Than (In.)	More Than (In.)
October 2021	2.07	1.39	149	0.87	1.65
November 2021	0.56	0.84	67	0.40	1.03
December 2021	1.77	1.02	174	0.59	1.25
January 2022	0.77	0.81	95	0.38	0.95
February 2022	2.28	0.78	292	0.37	0.93
March 2022	0.57	0.52	110	0.29	0.64
April 2022	0.14	0.35	40	0.13	0.42
May 2022	0.53	0.72	74	0.35	0.87
June 2022	0.80	1.22	66	0.81	1.49
Total	9.49	7.65	124	-	-

### Table 5 2022 Water Year WETS Precipitation for Matanuska Experimental Farm, Alaska

These data suggest that conditions during field work were normal to drier than normal, due to the lower than average precipitation in the months directly preceding field work.

The USACE and EPA Antecedent Precipitation Tool (APT, EPA 2022) was run for the dates the field work was conducted. The APT results showed that conditions were Normal on June 9, and conditions were Drier than Normal on June 10. The APT showed that delineations were conducted in the dry season. APT outputs are included in Table 6 and Appendix A.

Existing Data and Methodology

Date	Season	Antecedent Precipitation Score	Antecedent Precipitation Condition
6/9/2022	Dry Season	14	Normal Conditions
6/10/2022	Dry Season	9	Drier than Normal

### **Table 6 Antecedent Precipitation Tool Results**

### 2.1.8 Fire History

No fires have been recorded within the study area going back to 1940 (AICC 2022), although fire likely has been part of the ecosystem historically.

### 2.1.9 Sensitive and Rare Species

There are no threatened or endangered State or Federally listed species within the study area (USFWS 2022b).

### 2.1.10 Non-Native Species

The Alaska Exotic Plants Information Clearinghouse (AKEPIC) tracks non-native plant species in Alaska and provides biographies and risk assessments, to include an invasiveness ranking—the higher the number, the higher the conservation concern. The AKEPIC database and mapping applications show three survey datapoints within or near the study area corridor (AKEPIC 2022). Table 7 lists the 18 exotic plants in the database for this survey area.

Common Name	Scientific Name	Invasiveness Rank
lambsquarters	Chenopodium album L.	37
narrowleaf hawksbeard	Crepis tectorum L.	56
foxtail barley	Hordeum jubatum L.	63
leporinum barley	Hordeum murinum L. ssp. leporinum (Link) Arcang.	60
bigleaf lupine	Lupinus polyphyllus Lindl. ssp. polyphyllus	71
pineappleweed	Matricaria discoidea DC.	32
white sweetclover	Melilotus albus Medik.	81
timothy	Phleum pratense L.	54
common plantain	Plantago major L.	44

### **Table 7 AKEPIC listed Non-Native Plants**

Existing Data and Methodology

annual bluegrass	Poa annua L.	46
prostrate knotweed	Polygonum aviculare L.	45
old-man-in-the-Spring	Senecio vulgaris L.	36
corn spurry	Spergula arvensis L.	32
common chickweed	Stellaria media (L.) Vill.	42
common dandelion	Taraxacum officinale F.H. Wigg.	58
alsike clover	Trifolium hybridum L.	57
red clover	Trifolium pratense L.	53
white clover	Trifolium repens L.	59

### 2.2 METHODOLOGY

### 2.2.1 Field Data Collection

During the 2022 wetland field evaluations, Global Positioning System (GPS) locations and detailed information on one tenth of an acre plots (1/10) were recorded in representative project vegetation types. Additional field data, notes, and photographs were used to evaluate mapping areas with similar characteristics.

Field data was collected and recorded using three types of plots:

- Wetland Determination (WD) Plots. At these sites, investigators recorded detailed descriptions of vegetation, hydrology, and soils on field data forms. Wetland status for this plot type was determined based on the presence or absence of hydrophytic vegetation, hydrology, and hydric soils.
- Field Verification Points (FVP). Photographs and GPS locations were taken for vegetation communities and landscape positions that were clearly wetlands or upland based on WD results in nearby similarly situated areas with similar site-specific information. Project Vegetation Type, Hydrogeomorphic (HGM), and Cowardin classifications were recorded.
- 3. Stream Crossing (SC) Points. Photographs and GPS locations were taken when streams were encountered. Information on the stream status as intermittent or perennial Relatively Permanent Waters (USACE 2010) and additional stream data were collected.

Generally, the information collected at each representative wetland determination field plot included:

- percent coverage of all plant species (tree, shrub, and herbaceous species) and their wetland indicator status according to the 2020 *National Wetland Plant List* (NWPL, USACE 2020a);
- vegetation type;

Existing Data and Methodology

- soil characteristics;
- visible or readily apparent hydrologic characteristics;
- physical characteristics including aspect, elevation, landform, and topography;
- location information including latitude and longitude (in NAD83, decimal degrees);
- wetland descriptors including HGM and Cowardin classifications;
- indications of prior disturbance and whether current conditions represent the 'new normal'; and
- direct wildlife observations, as well as indirect observations such as trails, scat, dens, or heavy browse.

### Plant Data

Alaska plant indicator statuses follow the Alaska 2020 NWPL (USACE 2020a). Alaska is divided into subregions, where plant indicator statuses may differ from the rest of the State. The study area is not within any subregions, so there are no modifications to plant indicator statuses. Plants observed during field work and their indicator statuses are listed in Appendix B.

The presence of hydrophytic vegetation was determined using the prevalence index and the dominance test (USACE 2007).

### Hydric Soils Assessment

Field indicators of hydric soils and determination of hydric soil status was based on USDA National Resource Conservation Service (NRCS) guidance (USDA 2018) and the Alaska 2007 Supplement (USACE 2007). The 2007 Supplement contains a subset of hydric soil indicators found in the U.S. as determined by the National Technical Committee for Hydric Soils (USACE 2007). Additional soil characteristics recorded within the soil horizons were based on NRCS guidance (Schoeneberger et al. 2012).

### Hydrology

The 2007 Supplement lists numerous primary and secondary hydrology indicators. All indicators found in the sampling area were recorded in the data form.

### Field Data

Field plot data were collected at 53 sites throughout the study area, but primarily focused on areas where Cook Inlet Wetland, NWI, or NHD mapping (Sections 2.1.1, 2.1.2, and 2.1.5, Figure 2), or landscape position showed potential for Wetlands and Waters. Field site locations were determined using a sub-meter GPS unit. All field data were entered into a project database where the data were reviewed; queries were generated from the database to provide the information needed for mapping and results analyses.

Existing Data and Methodology

Field data were collected June 9-10 by Stantec Professional Wetland Scientist Zach Baer and Field Technician Alivia Lowell. Field plot types collected are shown in Table 8. Field forms and photos for all WD plots, and photos of FVP and SC plots are presented in Appendix C.

### **Table 8 Field Plots**

Company	Field Plot Type	Wetlands and Waters	Uplands	Total Plots
	Wetland Determination (WD)	5	6	11
Stantec	Field Verification Point (FVP)	14	25	39
	Stream Crossing (SC)	3	0	3
	Total	22	31	53

### 2.2.2 Mapping

Final mapping (wetland boundaries, HGM classification, Cowardin code, and Vegetation Type) was completed using digital, true color orthoimagery collected by the Matanuska-Susitna Borough in 2019 and 2021 that maintains a resolution of 0.5-feet in ESRI's ArcMap GIS (10.8) environment. Additionally, a Hillshade derived from a 1-meter Bare Earth Digital Elevation Model collected in 2011 was utilized in the mapping process.

Field data were used to identify the characteristics of the vegetation and wetlands or non-wetlands community at a specific location. The information gathered from one site was used for calibration to extrapolate to similar unvisited sites within the mapping environment. In addition to imagery interpretations, ancillary data including field notes, general landscape position, slope, aspect, landform and proximity to other vegetation community types and land cover types were utilized to assist in the mapping process.

Mapping polygons were drawn to delineate differences among the four classification systems used to attribute each polygon. Polygons were drawn around all features. When stream boundaries were not visible due to overhanging vegetation, polyline features were drawn to indicate location. Wetland boundaries were delineated at scales between 1:600 (one inch equals 50 feet) to 1:800 (one inch equals 67 feet).

Results

## 3.0 **RESULTS**

### 3.1 WETLANDS AND WATERS

The field verified Wetlands and Waters totals are shown in Table 9. Nearly 15 percent of the study area was identified as Wetlands and Waters. Figure 4 shows an overview of the Wetlands and Waters in the study area. Detailed figures for the study area are provided in Appendix D.

### **Table 9 Wetlands and Waters**

Status	Acres	Percent of Study Area
Wetlands	15.02	14.4
Waters	0.05	<0.1
Total Wetlands and Waters	15.07	14.4
Uplands	89.38	85.6
Total	104.44	100.0

\*Apparent inconsistencies in sums are the results of rounding

Wetlands and Waters were found in the eastern two-thirds of the study area, occupying low-lying, concave landscape positions (Figure 4). Wetlands were found in generally the same locations as mapped by the NWI and CIW, however, the field verified mapping presented here refined the boundaries presented in those relatively coarse-scaled products. The field verified mapping determined that 15.07 acres of wetlands and waters occurred within the study area, versus the 29.0 acres mapped by CIW and the 29.7 acres mapped by the NWI.

Wetlands and Waters in the study area are all connected upstream to a large wetland complex situated directly to the northeast of the study area. A small, slow-moving stream flowing from this complex parallels the northern portion of the study area before crossing under Wyoming Drive in a culvert. This stream supports a broad swale, and water from this system flows to the wetlands in the study area lying west of Wyoming Drive. Wetlands in the study area to the east of Wyoming Drive are supported by this swale or are directly part of the large wetland complex. At the eastern end of the study area, two streams drain the large wetland complex into Beverly Lake to the south.





Study Area

Aquatic Resource Type

- Stream
- Ketland

0		1,000	2,0	00 Feet	$\wedge$
	(At original c 1:14,000	locument siz 1 inch = 1,	e of 8.5x11) 166.67 feet	1001	w - Qo
Clie	ent AK Dept. of	Transport	ation & Pul	olic Fa	acilities

Project

Seldon Road Extension Phase II

Figure

Wetlands and Waters Overview

Figure Number **4** 



E

#### Results

### 3.1.1 Cowardin Classification

As part of the wetlands mapping, Wetlands and Waters were classified according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Approximately one-third of wetlands were classified as Deciduous Shrub (33.2 percent of Wetlands and Waters). The next largest categories were Coniferous Scrub (21.6 percent of Wetlands and Waters) which is comprised of stunted black spruce saplings, and Coniferous Forest (20.9 percent of Wetlands and Waters) which is comprised of black spruce forests. Herbaceous wetlands totaled 15.3 percent of Wetlands and Waters, while Mixed Forests and Deciduous Forests each covered less than five percent of Wetlands and Waters. Streams totaled 0.3 percent of Wetlands and Waters. Wetlands and Waters polygons are labeled by Cowardin Classification on the Wetlands and Waters detail figures presented in Appendix D. All classifications and total acres for each are shown in Table 10.

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters
Wetlands				
Coniforaua Earaat	PFO4/SS1	1.63	1.6	10.8
Conilerous Forest	PFO4/EM1	1.52	1.5	10.1
То	tal Coniferous Forest	3.14	3.0	20.9
Mixed Forest	PFO4/1	0.67	0.6	4.4
	Total Mixed Forest	0.67	0.6	4.4
Deciduous Forest	PFO1/EM1	0.35	0.3	2.3
Deciduous Forest	PSS1/FO1	0.29	0.3	1.9
Total Deciduous Forest		0.64	0.6	4.3
	PSS4/1	0.44	0.4	2.9
Carifornus Carub	PSS4/EM1	1.00	1.0	6.7
Connerous Scrub	PSS1/4	1.62	1.5	10.7
	PEM1/SS4	0.20	0.2	1.3
То	tal Coniferous Scrub	3.26	3.1	21.6
	PSS1	0.53	0.5	3.5
Deciduous Shrub	PSS1/EM1	2.18	2.1	14.4
	PEM1/SS1	2.29	2.2	15.2
Тс	otal Deciduous Shrub	5.00	4.8	33.2
Herbaceous	PEM1	2.31	2.2	15.3
	Total Herbaceous	2.31	2.2	15.3

### Table 10 Cowardin Classifications for the Study Area

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters
	Total Wetlands	15.02	14.4	99.7
Waters				
Streem	R2UB	0.01	<01	0.1
Stream	R3UB	0.04	<0.1	0.3
	Total Stream	0.05	<0.1	0.3
	Total Waters	0.05	<0.1	0.3
Total	Wetlands and Waters	15.07	14.4	100.0
Total Uplands		89.38	85.6	
	Total Study Area*	104.44	100.0	

Results

\*Apparent inconsistencies in sums are the results of rounding.

### 3.1.2 Project Hydrogeomorphic Classification

Wetland functional capacity was assessed using an HGM-based rapid assessment procedure. This procedure is based on the essential elements of the Hydrogeomorphic approach described by the USACE in Brinson (1993) and Smith et al. (1995) to identify groups of wetlands that function similarly.

The HGM classification is based on a wetland's: (1) position in the landscape or geomorphic setting, (2) dominant source of water, and (3) hydrodynamics of the water in the wetland (Brinson 1993). The purpose of the HGM classification is to provide a mechanism to account for the natural variation inherent between wetlands, particularly when wetland functions are being assessed. For example, a riverine wetland will generally have a much higher opportunity to export organic carbon than an isolated depressional wetland due to the riverine wetland's landscape position and hydrodynamics. Table 11 provides a summary of the acres of each HGM type as currently classified within the study area.

Results

HGM Classification	Acres	Percent of Study Area				
Wetlands						
Riverine	0.51	0.5				
Slope	14.51	13.9				
Total Wetlands	15.02	14.4				
Waters						
Riverine Channel	0.05	<0.1				
Total Waters	0.05	<0.1				
Total Wetlands and Waters	15.07	14.4				
Total Uplands	89.38	85.6				
Total Study Area	104.44	100.0				

### Table 11 Hydrogeomorphic Classification

\*Apparent inconsistencies in sums are the results of rounding

The HGM classes identified in the study area are shown on the detailed figures in Appendix D and discussed in the following section. The HGM descriptions are taken from Wetland Functional Assessment Guidebook, Operational Draft Guidebook for Assessing the Functions of Slope/Flat Wetland Complexes in the Cook Inlet Basin Ecoregion Alaska, using the HGM Approach (Hall et al 2003), an application of the HGM approach for precipitation driven wetlands on discontinuous permafrost in Interior Alaska.

### Slope Wetlands

Slope HGM wetlands normally occur where there is a discharge of groundwater to the land surface. They exist on sloping land surfaces from steep hillslopes and swales to nearly level terrain. Slope wetlands are usually incapable of depressional water storage. Principal water sources are groundwater return flow and interflow from surrounding non-wetlands and precipitation. Hydrodynamics are dominated by downslope unidirectional flow. Slope wetlands can occur in nearly level landscapes if groundwater discharge is a dominant source to the wetland surface. Slope wetlands lose water by subsurface flows, surface flows, and by evapotranspiration (Hall et al 2003). Examples of slope wetlands in Alaska include patterned fens, hillside seeps, spring-fed wetlands, and wetlands at the base of bluffs or toeslopes where groundwater is discharged near the surface.

The majority of wetlands within the study area are classified as Slope wetlands (Photo 2). They are supported by discharge of groundwater from the Talkeetna Mountains to the north.

Results

### Photo 1 Slope HGM Wetland



### **Riverine Wetlands**

Riverine HGM wetlands are found within active floodplains and riparian corridors associated with river and stream channels. Dominant water sources are subsurface hydraulic connections or overbank flow from nearby river and stream channels and wetlands. Groundwater discharge from surficial aquifers, overland flow from neighboring uplands and small tributaries, and precipitation may contribute additional inputs. Riverine wetlands lose surface water by flow returning to the channel after flooding or precipitation events.

Subsurface water loss generally occurs through discharge to nearby active channels, evapotranspiration, and vertical migration to deeper groundwater (Hall et al 2003).

Riverine wetlands in the study area occur in the swale containing the stream that crosses under Wyoming Drive (Photo 1). Other creeks in the study area are incised; overbank flooding does not occur enough to create or support wetlands in the adjacent riparian zone.

Results

### Photo 2 Riverine HGM Wetland



**Riverine Channel Waters** 

Streams and rivers (RPW) are classified as Riverine Channel in the project HGM system.

The three unnamed streams intersecting the study area are considered Riverine Channel. The stream identified at data point ST053 is shown in Photo 3.



### Photo 3 Riverine Channel Stream

Results

### 3.1.3 Streams

Three Perennial RPW streams were found within the study area (Figure 4, Appendix D). The NHD had mapped two streams in the study area but only one of these streams was verified. However, two additional streams were found that the NHD had not mapped.

The total length of streams within the study area was 756 linear feet.

### 3.1.4 Jurisdictional Status of Wetlands and Waters

The Wetlands and Waters within the study area have adjacent downstream connections to Beverly Lake, which flows through several lakes and unnamed streams to Little Meadow Creek, which flows to Meadow Creek, which flows to Big Lake, a Traditional Navigable Water.

The jurisdictional status of the Waters of the U.S. is ultimately determined by USACE.

### 3.1.5 Plant Species

Thirty-two vascular plant species were recorded at WD plots in the study area. No recorded species were threatened or endangered. No non-native plant species were recorded. Non-native plant species were observed in the road shoulder along the study area; however, these areas were uplands in the road prism and not broadly sampled during the field effort. The full list of plant species recorded is presented in Appendix B. Appendix B lists all plant species presented on data forms (Appendix C) by the nomenclature of the NWPL (USACE 2020a).

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# **APPENDICES**

Appendix A Antecedent Precipitation Tool

## Appendix A ANTECEDENT PRECIPITATION TOOL

## Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Written by Jason Deters U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation $\Delta$	Weighted $\Delta$	Days Normal	Days Antecedent
PALMER MUNI AP	61.5961, -149.0917	229.987	16.468	157.403	10.003	8544	90
PALMER JOB CORPS	61.5889, -149.0992	215.879	0.555	14.108	0.258	2675	0
PALMER 1.7 WNW	61.6185, -149.1258	435.039	1.911	205.052	1.252	18	0
BEN'S FARM	61.5633, -149.1542	126.969	3.059	103.018	1.692	109	0
LAZY MTN	61.6267, -149.0364	732.94	2.788	502.953	2.657	7	0

Daily Total
30-Day Rolling Total

30-<mark>Year</mark> Normal Range

202	2 2	Sep 2022	Oct 2022
ndition Value	Month Weight		Product
2	2		0

3	3	9
2	2	4
1	1	1
		Normal Conditions - 14



Coordinates	61.617, -149.591
Observation Date	2022-06-10
Elevation (ft)	387.39
Drought Index (PDSI)	Not available
WebWIMP H <sub>2</sub> O Balance	Dry Season



Figure and tables made by the Antecedent Precipitation Tool Version 1.0

Written by Jason Deters U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation $\Delta$	Weighted $\Delta$	Days Normal	Days Antecedent
ANCHORAGE 5.2 SE	61.1926, -149.7542	265.092	29.816	122.298	17.064	193	0
ANCHORAGE 5.0 ESE	61.1945, -149.7573	226.05	29.705	161.34	18.16	167	21
ANCHORAGE 4.8 E	61.2047, -149.7563	229.987	29.007	157.403	17.619	510	0
KNIK 10.0 ESE	61.4176, -149.4477	-3280.512	14.564	3667.902	59.973	1399	0
EAGLE RIVER 7.0 SE	61.2378, -149.4543	1914.042	26.587	1526.652	52.553	19	0
EAGLE RIVER 6.2 ESE	61.2869, -149.3945	633.858	23.713	246.468	16.515	119	0
ANCHORAGE 3.1 ESE	61.2059, -149.8112	133.858	29.322	253.532	20.629	4	0
EAGLE RIVER 3.1 NNE	61.3659, -149.5501	255.906	17.402	131.484	10.119	8	0
EAGLE RIVER 2.6 ESE	61.3122, -149.4958	798.885	21.293	411.495	18.344	2679	69
EAGLE RIVER 7.8 SE	61.2272, -149.4401	2155.84	27.39	1768.45	60.763	16	0
CHUGIAK 0.8	61.4069, -149.4872	190.945	14.914	196.445	9.641	74	0
ANCHORAGE 4.5 E	61.213, -149.7649	224.081	28.5	163.309	17.479	9	0
WILLOW 3.6 SE	61.6995, -149.9897	304.134	14.266	83.256	7.607	60	0
WASILLA 2.7 NW	61.6058, -149.5233	493.11	2.355	105.72	1.309	6	0
PALMER 1.7 WNW	61.6185, -149.1258	435.039	15.279	47.649	7.604	4	0
BUTTE 3NNE	61.5836, -149.0056	246.063	19.375	141.327	11.457	1563	0
CAMP TOGOWOODS	61.495, -149.7572	140.092	10.048	247.298	7.006	406	0
CASWELL 5 N	61.9736, -150.0594	250.0	29.0	137.39	17.034	620	0
BEN'S FARM	61.5633, -149.1542	126.969	14.83	260.421	10.536	2340	0

— Daily Total — 30-Day Rolling Total

30-Year Normal Range

Aug	Sep	Oct
2022	2022	2022

Appendix B Plant List

## Appendix B PLANT LIST

Plants recorded in the study area during field work in 2022 are presented in the table.

Indicator status abbreviations are as follows:

- OBL: Obligate Wetland Plants (Almost always occur in wetlands)
- FACW: Facultative Wetland Plants (Usually occur in wetlands, but may occur in non-wetlands)
- FAC: Facultative Plants (Occur in wetlands and non-wetlands)
- FACU: Facultative Upland Plants (Usually occur in non-wetlands, but may occur in uplands)
- UPL: Upland Plants (Almost always occur in non-wetlands)

Latin name, common name, and indicator status rating are from the National Wetland Plant List (USACE 2020a).

Tree

Latin Name	Common Name	Indicator Status Rating
Betula neoalaskana	Alaska Paper Birch	FACU
Picea glauca	White Spruce	FACU
Picea mariana	Black Spruce	FACW
Populus tremuloides	Quaking Aspen	FACU

	Shru	b/Sa	pl	ling	
ſ					

Latin Name	Common Name	Indicator Status Rating
Alnus incana	Speckled Alder	FAC
Betula glandulosa	Resin Birch	FAC
Betula neoalaskana	Alaska Paper Birch	FACU
Chamaedaphne calyculata	Leatherleaf	FACW
Dasiphora fruticosa	Golden-Hardhack	FAC
Empetrum nigrum	Black Crowberry	FAC
Linnaea borealis	American Twinflower	FACU
Myrica gale	Sweetgale	OBL
Picea glauca	White Spruce	FACU
Picea mariana	Black Spruce	FACW
Populus tremuloides	Quaking Aspen	FACU
Rhododendron groenlandicum	Rusty Labrador-Tea	FAC
Rosa acicularis	Prickly Rose	FACU
Salix barclayi	Barclay's Willow	FAC
Salix pulchra	Diamond-Leaf Willow	FACW
Vaccinium ovalifolium	Oval-Leaf Blueberry	FAC
Vaccinium uliginosum	Alpine Blueberry	FAC
#### WETLANDS AND WATERS DELINEATION REPORT

Appendix B Plant List

Latin Name	Common Name	Indicator Status Rating
Vaccinium vitis-idaea	Northern Mountain-Cranberry	FAC
Viburnum edule	Squashberry	FACU

Herb

Latin Name	Common Name	Indicator Status Rating
Athyrium cyclosorum	Western Lady Fern	FAC
Calamagrostis canadensis	Bluejoint	FAC
Chamaenerion angustifolium	Narrow-Leaf Fireweed	FACU
Comarum palustre	Purple Marshlocks	OBL
Cornus canadensis	Canadian Bunchberry	FACU
Equisetum arvense	Field Horsetail	FAC
Equisetum fluviatile	Water Horsetail	OBL
Equisetum sylvaticum	Woodland Horsetail	FAC
Geocaulon lividum	False Toadflax	FACU
Rubus arcticus	Northern Blackberry	FAC
Rubus chamaemorus	Cloudberry	FACW
Streptopus amplexifolius	Clasping Twistedstalk	FACU
Trientalis europaea	Arctic Starflower	FACU

#### WETLANDS AND WATERS DELINEATION REPORT

Appendix C Field Data Forms and Photos

# Appendix C FIELD DATA FORMS AND PHOTOS

#### WETLANDS AND WATERS DELINEATION REPORT

Appendix D Wetlands and Waters Detail Figures

# Appendix D WETLANDS AND WATERS DETAIL FIGURES











Plot Number	ST001				
Wetland Status	Upland				
Plot Type	FVP				
Plot Date	6/9/2022				
NWI Classification	U				
HGM	N/A				
Latitude (DD)	61.6177253214				
Longitude (DD)	-149.591384877				



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: S



Photo Type: Vegetation

#### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 002	
Project: SELDON 7	D. 71	1158	22				Da	ate: 6/6/22	
Applicant: APOT + ?1	n r						In	vestigators: ZB+AL	
Borough/City/Locatio	n: N	AT-SU	~						
NAD 83, Decimal Degrees								STANTEC	
Latitude: 61.61770	~ BC	)			Waters	ned:	FISHC	V REK	
Longitude: 149,593	479	in			Location	n Note	S:		
Elevation (ft):	<i>.</i>			- P			i e da n		
								SUMMARY OF FINDINGS	
Are "Normal Circumsta	nces"	Presen	t?	YES		H	Hydroph	ytic Vegetation Present?	
Significantly Disturbed?	>	VEG	SOIL	S HYDRO				Hydric Soils Present?	
Naturally Problematic?		VEG	SOIL	S HYDRO			Wet	and Hydrology Present?	
Remarks:					Is the	Sam	oled Ar	ea within a Wetland?	
VEGETATION	T< 1%	P = Pre	sent		SUBREG				
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	ular plot unless no	oted, absolut	e cover i	recorded	Dominance Test worksheet:	
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species	
1. RETNER	E.	V.	) entrem.	3 21001 1	100 A	V	110	That Are OBL, FACW, or FAC:	A)
2 22 10	FU D	7.	15	1 CALA	1 M		10	Total Number of Dominant	
Z. FICMAR	TW		10	4.	000/ 57			Species Across All Strata:	B)
Total Tree Cover: 35	:	50% of 10	otal Cove	er: 170	20% of 10	tal Cove	er: 7	Percent of Dominant Species 56	
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC:(A	B)
1. PICMAR	FW	Y	5	9.				Provalance Index Workshoot	_
2. RETNED	FU	N	3	10.				Total % Cover of Multiply by:	
3. VIBEDU	FU	N	3	11.					
4. RHOGRO	F	Y	5	12.		- 9-2-		OBL species x 1 =	
5. VACVIT	F	Y	7	13.				FACW species x 2 =3O	
6. LINBOR	FU		3	14.				FAC species $18 \times 3 = 54$	
7.	1			15.				EACH spacies 51 x 1 = 204	
Total Shrub Cover: 7.6 50% of Total Cover: 12 20% of Total Cover: 6.3				r: 5 2					
Herbaceous Stratum	IND	DOM	Cover	13			0.6	UPL species $x_5 = 0$	
1 0110000	TeA	V	7	14				Column Lotals:(A)(B)	
2 CHAMING	E	1	7	15				Browelence Index - B/A - 3.43	
3 ATTACYC	-		-	16					
A DISC	+ CII	$\left( \right)$	2	17		-		Hydrophytic Vegetation Indicators:	
- GYMDREY	FU	1	L	17.				Dominance Test is >50%	
5. CALCAN	F	N		18.			-	Prevalence Index is $\leq 3.0$	
D. COKCAN	FU	Y	5	19.				(Provide supporting data in	
1. STRAMP	FU	N	T	20.				Remarks or on a separate sheet)	
8. GEOLIN	FU	N	3	21.	100000			Problematic Hydrophytic Vegetation <sup>1</sup>	
9. TRIEUR	FU	N	7	22.				must be present unless disturbed or problematic.	У
10.				23.				Project Vegetation Type	
11.				24.				OME	
12.				25. MOSS	24002010	all and the	40	Cowardin Code:	
Total Herb Cover: 73	5	0% of To	otal Cove	r: 11.5	20% of Tot	al Cove	: 4,6	N	
1.Open Water				2. Bare ground			11 -	HGM Classification:	
Remarks: Bryophytes and L	ichens	may be li	sted in the	e Herbaceous col	lumns			Landform:	
								MORAINE	
								Local Relief: UNDULATING	
								Iviicrotopography: Slope: Aspect:	
									- 1

#### SOIL

Plot No: ST 602

Profile Des	cription: D	Describe to the depth needed to document the presence/absence of soil indicators Soil Map Unit Name									
	Horizon	Soil Mat	atrix Redox Features CICHA1						14TWA SILT LOAM, SLOPING + MOD. STEEP		
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	omments
2-0	0e										
0-7	Bha/E	104241	4 60			~			SIL		
7-	F	2.54.5/1	40						SIL		
7-22	BW	10YR 3/4	100		and a file when the paper of the state of the	-			SIL		
								4			
<sup>1</sup> Type: C=Conce	entrations D=	Depletions OX=Oxi	dized Roots	RM = Re	duced Matrix <sup>2</sup> Locatio	n: PI =Pc	re Linings	RC=Root	Channels M	I=Matrix_CS=C	nated Sand Grains
Remarks:	Cryo	terbate	d 51	oodo	150/		3	Texture M Coarse F (15-35	lodifiers: Muc ragments: Gi %), 35-60% =	cky (MK), Peaty ravelly (GR), Co Very (V), 60-9	(PT), Permafrost (PF)   bbbly (CB), Stony (ST) 0% = Extremely (X)
Hydric Soli II	laicators	Measure from the	top of the	minerals	soll layer except for P	A1, A2, I	43, A4				
Histosol o	r Histel (A1)	<u>/</u>	✓ Thick D	ark Surfa	aces (A12)				Hydric Pres	Soils ent?	NO
Black Hist	tic (A3)	_	$\sim$ Alaska	Redox (A	(14)				NRCS Dra	inage Class:	MWD
Hydrogen	Sulfide (A4)		Alaska	Gleyed F	Pores (A15)				Depth of C	organic Soils:	2
Indicators for	Problemati	c Hydric Soils⁵ (	See Page	91/Sectio	on 4 for Problematic	Hydric S	Soils Detai	ls)	Restrictive	Layer Type:	NA
<u>∼</u> Depleted	Below Dark	Surface (A11) _	Alaska	Color Ch	ange (TA4) Give de	etails of	color chan	nge Re	estrictive La	yer Depth:	NA
Depleted	Depleted Matrix (F3) Alaska Alpine Swales (TA5) 4Underlain by mineral soil w/chroma of ≤2							v/chroma of ≤2			
Redox Da	<u>∧ Redox Dark Surface (F6)</u> Alaska Redox with 2.5Y Hue     Struct have Hudrenbutic Vegetation and						netation and				
	Dark Surface	e (F7)	∕ Alaska	Gleyed w	/o Hue 5Y or Redde	r Under	lying	Pr	imary Hydr	ology, and an	appropriate
Redox De	pression (F8	3)	AA Pos	itive (min	eral soil, 60% of hor	izon 4 ir	nches thick	k) la pr	ndscape po oblematic	sition unless of	disturbed or
Red Pare	nt Material (F	-21)	Pondec	I/Flooded	I/High Water Table (	12 inche	es or highe	er)	( 0))		
	low Dark Su	rface (F22)	Low Or	ganic Ma	itter/Low Iron/High pl	H Soil/N	ew Wetlar	nd 🔬	Other (ex	plain in rema	rks)
HYDROLOGY Wetland Hydrology Indicators											
Primary Indica	tors (any one	e indicator is suffi	cient)	allators			<u>∧</u> w	ater-stai	ned Leaves	(B9)	
N Surface W	Vater (A1)	4	N Inunda	tion Visib	le on Aerial Imagery	(B7)		rainage I	Patterns (B1	10)	
N High Wate	er Table (A2)		✓ Sparse	ly Vegeta	ated Concave Surfac	e (B8)	No	xidized F	Rhizosphere	es along Living	Roots (C3)(w/in 12")
N Saturation	n (A3)	1	✓ Marl D	eposits (B	315)		MA Pr	resence	of Reduced	Iron (C4)	
Nater Ma	rks (B1)	1		en Sulfid	le Odor (C1) (w/in 12	2")	N Sa	alt Depos	sits (C5)		
N Sediment	Deposits (B2	2) 2	Model Not	ason Wa	ter Table (C2)**		∧_ St	unted or	Stressed P	Plants (D1)	
Drift Depo	osits (B3)		C Other (	Explain i	n Remarks)		N G	eomorph	nic Position	(D2)	
Algal Mat	or Crust (B4	)	0				/V St	hallow A	quitard (D3)	(w/in 24", no	te as restrictive layer)
N Surface S	sits (B5) oil Crooke (B	26)	Are Climat	this time	ogic Conditions on S	lite			graphic Keil	er (D4)	
Field Observa	ations (inche	es from around su	inface)	uns une		Wa	ter Source	-iveut		Wetland Hy	drology Present?
Surface Water	Present?	Yes N	lo 🔀	Depth (ir	ches): NA	1.14					AD
Water Table P	resent?	Yes N	o X	Depth (in	nches): MM					Dry Sea	son Water Table
Saturation Pre	sent?	Yes N	lo	Depth (in	nches): <u>MA</u>	_				SC, Inter	ior, Western AK:
(includes capil	ary mige)	Episaturatio	n	Endosat	turation					Mid M	ay – late July
Describe Reco	orded Data (s	stream gauge, mo	onitoring we	ell, aerial	pnotos, previous ins	pections	s), if availa	ble:		**Organic	Soils 12-24 inches Soils 12-40 inches
Remarks:									F	AC-Neutral Te	st = #OBL+FW
and scenario and			terration of the second se		the second s				d	ominants > #F dd non-domina	U + UPL dominants; ants if tie

Plot Number	ST002				
Wetland Status	Upland				
Plot Type	WD				
Plot Date	6/9/2022				
NWI Classification	U				
HGM	N/A				
Latitude (DD)	61.6177068127				
Longitude (DD)	-149.593455778				



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST003				
Wetland Status	Wetland				
Plot Type	FVP				
Plot Date	6/9/2022				
NWI Classification	PSS1/EM1C				
HGM	Slope				
Latitude (DD)	61.617823906				
Longitude (DD)	-149.594192248				



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST004				
Wetland Status	Upland				
Plot Type	FVP				
Plot Date	6/9/2022				
NWI Classification	U				
HGM	N/A				
Latitude (DD)	61.6177301924				
Longitude (DD)	-149.59407732				



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST005				
Wetland Status	Upland				
Plot Type	FVP				
Plot Date	6/9/2022				
NWI Classification	U				
HGM	N/A				
Latitude (DD)	61.6174745809				
Longitude (DD)	-149.594651309				



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST006				
Wetland Status	Wetland				
Plot Type	FVP				
Plot Date	6/9/2022				
NWI Classification	PFO4/SS1C				
HGM	Slope				
Latitude (DD)	61.6172887143				
Longitude (DD)	-149.595661378				



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST007					
Wetland Status	Wetland					
Plot Type	FVP					
Plot Date	6/9/2022					
NWI Classification	PFO4/SS1C					
HGM	Slope					
Latitude (DD)	61.617526435					
Longitude (DD)	-149.596540797					



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: NE



Photo Type: Vegetation

#### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 008			
Project: SELDON 1	22 1	PH 11					Da	ate: 6/9/22			
Applicant: APOT+7E					Inv	vestigators: ZB+A(_					
Borough/City/Location: MAT-SU											
NAD 83, Decimal Degrees		- Inclusion						STANTEC			
Latitude: 61.6172	20 M	J			Waters	shed:	FISH	CREEK			
Longitude: 149 59	687	8W			Locatio	on Note	S:				
Elevation (ft):			-								
					.1			SUMMARY OF FINDINGS			
Are "Normal Circumsta	nces"	Presen	t?	YES		F	lydroph	ytic Vegetation Present?			
Significantly Disturbed?	?	VEG	SOILS	S HYDRO				Hydric Soils Present?			
Naturally Problematic?		VEG	SOILS	S HYDRO			Wet	and Hydrology Present? YES			
Remarks:					Is the	e Samp	oled Ar	rea within a Wetland? $\mathcal{N}_{\mathcal{S}}$			
VEGETATION	T< 1%	6, P = Pre	esent		SUBRE	GION:					
Tree Stratum DBH ≥ 3 inch	1	1/10	acre circu	lar plot unless no	oted, absolu	ute cover r	ecorded	Dominance Test worksheet:			
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species			
1. PICMAR	FW	Y	10	3.				Tatal Number of Deminant			
2.				4.				Species Across All Strata:			
Total Tree Cover: / O		50% of T	otal Cove	r: 5	20% of T	otal Cove	er: 2	Percent of Dominant Species			
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC:(A/E			
1. PICMAR	FW	X	20	9.							
2. RHOGRO	P	N	5	10.				Total % Cover of: Multiply by:			
3. VACVIT	F	N	3	11.							
4. ROSACI	PU	N	3	12.				OBL speciesx 1 =			
5. EMPNIG	F	N	T	13.				FACW species $30 x 2 = 60$			
6.				14.				FAC species x 3 = 30			
7.				15.				FACU species x 4 =24			
Total Shrub Cover: 3	ł	50% of T	otal Cove	r: 15.5	20% of To	otal Cove	r: 6.2	UPL species  x 5 = 0			
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals: <u>46</u> (A) <u>114</u> (B)			
1. EQUARY	F	Y.	2	14.				0.10			
2. GEOLIN	FU	Y	3	15.				Prevalence Index = B/A = 2,46			
3. CORCAN	FU	N	T	16.				Hydrophytic Vegetation Indicators:			
4.				17.				Dominance Test is >50%			
5.			×	18.				Prevalence Index is ≤3.0			
6.				19.				Morphological Adaptations <sup>1</sup>			
7.				20.				(Provide supporting data in Remarks or on a separate sheet)			
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>			
9.				22.				Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.			
10.				23.				Project Vegetation Type			
11.				24.				OBSE			
12.				25. MOSS		all chanter	80	Cowardin Code:			
Total Herb Cover: 5	(	50% of T	otal Cove	r: 2.5	20% of To	otal Cove	r:	HGM Classification:			
1.Open Water				2. Bare ground				MA			
Remarks: Bryophytes and L	ichens	may be l	isted in th	e Herbaceous co	olumns			Landform:			
en la charlanaithe								local Relief			
e - Angelen Berlin (* 1995) 1								Microtopography: Slope: Aspect:			
								HUMMOCKY (NED 2%			

C	2	1		
Э	υ	I	L	

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Plot No: ST 008

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Profile Des	cription: D	escribe to the depth n	eeded	to docun	nent the presence/al	bsence o	of soil indi	cators	Soil N	/lap Unit Name	)		
	Horizon	Soil Matrix Redox Features CP440								LUCPTS, PETAESSIGMIL, O TO 7 % SLOPES			
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	omments		
2-0	00												
0-12	BILE	INVEHIN	1.0					64	- SAI				
U len	DHIE	101-14 INVD 3/D	20					- A	- J/1-				
		OFR IS	50						-				
10 11	0.0	251711	10			+			- 10.3				
12-16	BC	7,5 YR 2/3	100				and and a second se	57	624				
									_				
16-20	C	7.5YR3/3	100	*				GR	- CSA		ed opening of the		
<sup>1</sup> Type: C=Conc	entrations, D=	Depletions, OX=Oxidized	Roots	RM = Re	duced Matrix <sup>2</sup> Locatio	on: PL=Pc	ore Linings,	RC=Roo	ot Channels,	M=Matrix, CS=C	oated Sand Grains		
Remarks	1	turbated	~	as la	exl			<sup>3</sup> Texture	Modifiers: M	ucky (MK), Peaty	(PT), Permafrost (PF)		
r tornanto.	Lygro	101 Daried	0	poso	201			Coarse	Fragments: 0	Gravelly (GR), Co	obbly (CB), Stony (ST)		
								(15-3	5%), 35-60%	= Very (V), 60-9	0% = Extremely (X)		
Hydric Soil I	ndicators	Measure from the top	of the	mineral	soil layer except for	A1, A2, I	A3, A4						
_ <u></u> Histosol o	or Histel (A1)	~	Thick D	Dark Surfa	aces (A12)				Hydri	c Soils	NO		
N Plack His	tic (A2)		Alaska	Gleyed (	A13)			-	NRCS D		SPD		
	In Alaska Redux (A14) NRUS Drainage Class: 01/								2"				
Indicators for Problematic Hydric Soile <sup>5</sup> (See Page 01/Section 4 for Problematic Hydric Soile Dataile) Postilative Lawer Type: A/A									A/A				
Depleted Below Dark Surface (A11)      Alaska Color Change (TA4). Give details of color change.     Destrictive Layer Type.     NA										NA			
Depleted Matrix (E3)     Alaska Alaina Swales (TA5)										w/chroma of ≤2			
∼ Redox Da	ark Surface (	F6)	laska	Redox w	ith 2.5Y Hue					/			
Depleted	Dark Surfac	e (F7)	Alaska	Gleyed v	v/o Hue 5Y or Redde	er Under	lying	F	Must have Primary Hyd	Hydrophytic Ve Irology and an	egetation and		
N Redox De	epression (F8	3)	A Pos	sitive (mir	neral soil, 60% of ho	rizon 4 iı	nches thic	k) la	andscape p	osition unless	disturbed or		
Red Pare	ent Material (I	F21)	onde	d/Flooded	/High Water Table (	(12 inche	es or high	er) p	problematic				
Very Sha	llow Dark Su	rface (F22) I	.ow Or	ganic Ma	atter/Low Iron/High p	H Soil/N	lew Wetla	nd _	NOther (e	explain in rema	irks)		
HYDROLOG	GY								,				
		Wetland Hydrol	ogy In	dicators			Secor	dary Ind	dicators (2 d	or more require	d)		
Primary Indica	ators (any on	e indicator is sufficien	t)				_∧ v	Vater-sta	ained Leave	es (B9)			
N Surface V	Vater (A1)	N	Inunda	tion Visib	ole on Aerial Imagery	/ (B7)		rainage	Patterns (B	310)	,		
High Wat	er Table (A2)	$\sim \sim$	Sparse	ely Vegeta	ated Concave Surfa	ce (B8)	MC	xidized	Rhizosphe	res along Livin	g Roots (C3)(w/in 12")		
<u> </u>	n (A3)	N	Marl D	eposits (I	315)		<u>NAT</u> P	resence	e of Reduce	d Iron (C4)			
Notice Ma	Water Marks (B1) // Hydrogen Sulfide Odor (C1) (w/in 12") // Salt Deposits (C5)												
N Drift Don	Deposits (B)	2) <u>/</u>	Other	Explain i	n Pomarka)				or Stressed	Plants $(D1)$			
	or Crust (B4	10	Other		n Remarks)			ballow A	Aquitard (D	3) (w/in 24" nc	te as restrictive laver		
	osits (B5)	Are	Climat	ic/Hvdrol	ogic Conditions on S	Site	V N	licrotop	ographic Re	elief (D4)	te do restrictive layer,		
N Surface S	Soil Cracks (E	36) Typ	ical for	this time	of Year? YES		¥ F	AC-Neu	itral Test (D	5)			
Field Observ	ations (inche	es from ground surfac	e)			Wa	ter Sourc	e:	,	Wetland Hy	drology Present?		
Surface Wate	r Present?	Yes No	$\times$	Depth (ir	nches): <u>NIA</u>						VES		
Water Table F	Present?	Yes 📈 No _		Depth (in	nches):20	_				Dry Sea	son Water Table		
Saturation Pre	esent?	Yes 🔀 No _		Depth (ir	nches):6	_				SC, Inter	ior, Western AK:		
(includes capi	ary mige)	Episaturation_		Endosa	turation					Mid N	lay – late July		
Describe Rec	orded Data (	stream gauge, monito	ring we	ell, aerial	photos, previous ins	pections	s), if availa	able:		**Mineral **Organic	Soils 12-24 inches Soils 12-40 inches		
Remarks:										FAC-Neutral Te	est = #OBL+FW		
yar seen										dominants > #F add non-domin	U + UPL dominants; ants if tie		

Plot Number	ST008						
Wetland Status	Upland						
Plot Type	WD						
Plot Date	6/9/2022						
NWI Classification	U						
HGM	N/A						
Latitude (DD)	61.617227989						
Longitude (DD)	-149.59685505						



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

#### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST	009
Project: SELDON	BD	PH 1					Da	ate: 6/9/22	
Applicant: ADD T+ P	) for				10101-5		In	vestigators: ZB, AL	
Borough/City/Locatio	n: M	AT-SU	1						
NAD 83, Decimal Degrees								STANTEC	
Latitude: 61.61733	IN				Waters	ned:	FISH	CREEK	
Longitude: 149, 595	7285	- 2			Location	n Note	S: +115"	TORIC POND - ENTRO	PHIED
Elevation (ft):									
								SUMMARY OF FI	NDINGS
Are "Normal Circumstan	nces"	Presen	nt?	YES		- F	lydroph	ytic Vegetation Present?	YES
Significantly Disturbed?	)	VEG	SOIL	S HYDRO				Hydric Soils Present?	YES
Naturally Problematic?		VEG	SOIL	S HYDRO			Wet	land Hydrology Present?	X458
Remarks:							,		100
					Is the	Samp	oled Ar	ea within a Wetland?	YB3
VEGETATION	T< 1%	A P = Pre	esent		SUBREG				
Tree Stratum DBH ≥ 3 inch	1 - 1/	1/10	acre circi	ular plot unless no	oted, absolut	e cover r	ecorded	Dominance Test w	orksheet:
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species	5
1		2011		3				That Are OBL, FACW, or FAC:	(A)
1.				3.				Total Number of Dominant	5
Ζ.				4.				Species Across All Strata:	(B)
Total Tree Cover:		50% of T	otal Cove	er:	20% of To	tal Cove	er:	Percent of Dominant Species	100
Sapling/Shrub Stratum	IND	DOM	Cover	8. LINBO	FU FU	N	T	That Are OBL, FACW, or FAC:	(A/B)
1. PICMAR	Fw	$\checkmark$	10	9. SALPU	IL FW	N	1		
2. MYRGAL	0	Y	10	10. CHACA	6 FW	N	T	Prevalence Index W	orksneet
3. DASFRU	P	Ý	7	11.				I otal % Cover of: Mult	
4. BETGIA	F	N	3	12.				OBL speciesx 1 =	10
5. VICONA	E	N	5	13.				FACW species <u>13</u> x 2 =	26
6. VACVIT	E	N	3	14.				FAC species 38 x 3 =	1)4
7 PHOGRO	F T	N		15					0
Total Shrub Cover: 111	LE	50% of T	otal Cove	n. 07	20% of Tot		. 00	FACU species $x 4 = x$	
Herbacoous Stratum		DOM	Cover	12	207001100		0.0	UPL speciesx 5 =	0
	IND	DOIN	Cover	13.				Column Totals:(A)	( <u>B</u> )
CALCAN	F	7	10	14.					746
2. EQUARV	F	7	5	15.				Prevalence Index = B/A =	2.10
3. RUBCHA	FW	N	à	16.				Hydrophytic Vegetatio	n Indicators:
4. TRIENR	FU	N	T	17.				Dominance Test is >50	%
5. RUBARE	F	N	T	18.				Prevalence Index is ≤3	0
6. POTPAL COMPAL	0	N	T	19.				Morphological Adaptation	ons <sup>1</sup>
7.				20.				Remarks or on a separa	ate sheet)
8.				21.				Problematic Hydrophyti	c Vegetation <sup>1</sup>
9.				22.				Indicators of hydric soil and	wetland hydrology
10.				23.				Project Vegetation	on Type
11.				24.				RSW	
12				25			20		Second Distant
Total Herb Cover:		50% of T	otal Cove		20% of Tet	al Cours	0.1	Cowardin Code: PSS1/4	Charlessee
1 Onon Water		50 70 OT 1	otal Cove	8,5	20% 01 100	ai covei	. 3.4	HGM Classification:	
Remarks: Bryonbytes and L	ichens	may be	isted in th	2. Bare ground	lumns		1	Landform	
Listinarios. Dryophytes and L	ionens	may be l			iunno			DEPRESSION	
								Local Relief: CONCAVE	
								Microtopography: Slope	Aspect:
								HUMMOCKY (MED) (	D NA

#### SOIL

Plot No: ST 009

Profile Des	cription: D	escribe to the depth	needed	to docun	nent the presence/abs	sence	of soil in	dicators	Soil N	Map Unit Name	9	
	Horizon	rizon Soil Matrix			Redox Feature	s		H	HISTOSULS			
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod	Texture	Horizon Co	omments	
2.0	A											
0 4	D		are	10.	1 EVD21	5	0.4		ISA.			
0- + :	59	1.5 VR 2-3/1	95	C	1.2 1K 2/4	0	RC	-	COAC	6		
											n henry of the end States	
<sup>1</sup> Type: C=Conc	entrations, D=	Depletions, OX=Oxidize	d Roots	, RM = Red	duced Matrix <sup>2</sup> Location	PL=P	ore Lining	is, RC=Ro	oot Channels,	M=Matrix, CS=C	oated Sand Grains	
Remarks:								<sup>3</sup> Texture	Modifiers: Mu	ucky (MK), Peaty	(PT), Permafrost (PF)	
								Coarse	e Fragments: (	Gravelly (GR), Co	obbly (CB), Stony (ST)	
Hvdric Soil I	ndicators	Measure from the top	o of the	mineral	soil laver except for A	1. A2.	A3. A4	(15-	35%), 35-60%	- very (v), 60-9	0% – Extremely (X)	
N Histosol	or Histel (A1)	N	Thick [	Dark Surfa	Ces (A12)	.,,			Ll	0.11.		
V Histosof C		<u></u>							Hyari	C 5011S	VER	
	ipedon (A2)*	10	Alaska	Gleyed (	A13)			-	110.	Sent:	1.00	
<u>M</u> Black His	tic (A3)		Alaska	Redox (A	(14)				NRCS D	ainage Class:	VPD	
<u>M</u> Hydrogen	n Sulfide (A4)		Alaska	Gleyed F	Pores (A15)				Depth of	Organic Soils:	8"	
Indicators for	r Problemat	ic Hydric Soils <sup>5</sup> (See	e Page	91/Sectio	on 4 for Problematic H	ydric S	Soils Det	tails)	Restrictiv	e Layer Type:	CLAY	
	Below Dark	Surface (A11) N	Alaska	Color Ch	ange (TA4) Give det	ails of	color ch	ange	Restrictive L	ayer Depth:	7.	
N Depleted	Matrix (F3)	$\sim$	Alaska	Alpine Sv	wales (TA5)				<sup>4</sup> Underlain b	v mineral soil v	w/chroma of ≤2	
N Redox Da	ark Surface (		Alaska	Redox w	ith 2.5V Hue			1 î [		,		
			Alaska			Linder	1.1		<sup>5</sup> Must have	Hydrophytic Ve	egetation and	
	Dark Surface	e(F7) <u>IV</u>	Alaska	Gleyed w	Vo Hue 5Y or Redder	Under	riying		Primary Hyc	Irology, and an	appropriate	
Redox De	epression (F8	B) <u>//</u>	AA Pos	sitive (mir	eral soil, 60% of horiz	zon 4 i	nches th	lick)	noblematic	osition unless	disturbed or	
Red Pare	ent Material (I	F21) <u>M</u>	Ponde	d/Floodec	I/High Water Table (1)	2 inche	es or hig	her)	problematio			
Nery Sha	llow Dark Su	rface (F22)	Low O	rganic Ma	tter/Low Iron/High pH	Soil/N	lew Wet	land	M Other (e	explain in rema	irks)	
HYDROLOG	GY											
		Wetland Hydro	logy In	idicators			Seco	ondary Ir	dicators (2 d	or more require	ed)	
Primary Indica	ators (any on	e indicator is sufficier	nt)				N	Water-s	tained Leave	es (B9)		
Y Surface V	Vater (A1)	N	Inunda	ation Visib	le on Aerial Imagery (	B7)	N	Drainag	e Patterns (E	310)		
High Wat	er Table (A2)	) $\frac{N}{N}$	Sparse	ely Vegeta	ated Concave Surface	e (B8)	4	Oxidized	Rhizosphe	res along Living	g Roots (C3)(w/in 12")	
Saturation	n (A3)		Marl D	eposits (E	315)		h I	Presenc	e of Reduce	d Iron (C4)		
Water Ma	arks (B1)		Hydrog	gen Sulfid	le Odor (C1) (w/in 12"	)	$\rightarrow$	Salt Dep	osits (C5)	Dianta (D1)		
N Drift Den	Deposits (D	2) <u>N</u>	Other	(Explain i	n Remarks)		Y	Geomor	or Stressed	Plants(DT)		
N Algal Mat	or Crust (B4	.)	Other		in Komarkay		Y	Shallow	Aquitard (D)	3) (w/in 24", no	te as restrictive laver	
V Iron Depo	osits (B5)	Are	Clima	tic/Hydrol	ogic Conditions on Sit	te	Y	Microtop	ographic Re	elief (D4)		
N Surface S	Soil Cracks (E	36) Тур	oical fo	r this time	of Year? 185		Y	FAC-Ne	utral Test (D	5)		
Field Observ	ations (inche	es from ground surfa	ce)		,/	Wa	ter Sour	ce:		Wetland Hy	drology Present?	
Surface Wate	r Present?	Yes 🔀 No		Depth (ir	nches):	-				~	YES	
Water Table F	Present?	Yes 🔜 No		Depth (in	iches):	-				Dry Sea	son Water Table	
Saturation Pre	esent?	Yes No _		Depth (in	iches):	-				SC, Inter	ior, Western AK:	
(includes capi	nary minge)	Episaturation		Endosat	turation×					Mid N	lay – late July	
Describe Rec	orded Data (s	stream gauge, monito	oring w	ell, aerial	photos, previous insp	ections	s), if ava	ilable:		**Mineral	Soils 12-24 inches	
		<u></u>								Organic	Sons 12-40 Inches	
Remarks:										FAC-Neutral Te	est = #OBL+FW	
dan pilantik pe		shi va spiji i .			is indirectant					add non-domina	ants if tie	

Plot Number	ST009
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	PSS1/4C
HGM	Slope
Latitude (DD)	61.6173314868
Longitude (DD)	-149.597285089



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: NE



Photo Type: Vegetation

Plot Number	ST010
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PSS4/1C
HGM	Slope
Latitude (DD)	61.6173631984
Longitude (DD)	-149.598378318



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST011
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6174135703
Longitude (DD)	-149.598681387



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

#### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 012		
Project: SELDON &	D	7+111					Da	ate: 6/9/22		
Applicant: APOT+	PF						In	vestigators: ZB+AL		
Borough/City/Locatio	n: N	AT-SU								
NAD 83, Decimal Degrees STANTEC										
Latitude: 61.61709	12			8. I	Waters	hed:	FISH C	REEK		
Longitude: 149,607	1653				Locatio	n Note	S:			
Elevation (ft):										
								SUMMARY OF FINDINGS		
Are "Normal Circumsta	nces"	Presen	t?	YES		F	lydroph	ytic Vegetation Present? YES		
Significantly Disturbed?	)	VEG	SOILS	S HYDRO				Hydric Soils Present?		
Naturally Problematic?		VEG	SOILS	S HYDRO			Wet	land Hydrology Present?		
Remarks:					Is the	e Samp	oled Ar	rea within a Wetland?		
VEGETATION	T< 1%	6, P = Pre	sent		SUBREC	GION:				
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	lar plot unless no	oted, absolu	te cover r	ecorded	Dominance Test worksheet:		
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species		
1. DICMAR	FW	V	30	3.				(A)		
2.			0	4.				Total Number of Dominant		
Total Tree Cover: 30	L	50% of To	otal Cove	r: 1 em	20% of T	otal Cove	r: h			
Sapling/Shrub Stratum	IND	DOM	Cover	8.		Τ	0	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)		
1. PICMAR	FW	Y	10	9.		-				
2. RHOGRO	E	V	5	10.				Prevalence Index Worksheet		
3. VACVIT	F	01	2	11.				Total % Cover of:Multiply by:		
4. LINBOR	Eu	N	- P	12.				OBL species x 1 =		
5	FM	10		13				FACW species $40_{x2} = 80_{x2}$		
6				14				EAC species $\overline{7} \times 3 = 21$		
7				15						
Total Shrub Covery	L		tal Cava		20% of To	tal Cava	0.1	FACU species x 4 =		
Horbassous Stratum			Cover	12	20% 0110		. 6.4	UPL species $x = 0$		
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals:(A)(D9(B)		
1. GEGLIV	fu	7	-l-	14.				222		
2.				15.				Prevalence Index = B/A = <u>2, C</u>		
3.				16.				Hydrophytic Vegetation Indicators:		
4.				17.				Dominance Test is >50%		
5.				18.				Prevalence Index is ≤3.0		
6.				19.				Morphological Adaptations <sup>1</sup>		
7.				20.				Remarks or on a separate sheet)		
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>		
9.				22.				must be present unless disturbed or problematic.		
10.				23.				Project Vegetation Type		
11.				24. MOSS		an manufations	80	OBSE		
12.				25. LICHEN	) -	and an and a state of the state	10	Cowardin Code:		
Total Herb Cover: 2	ŧ	50% of To	tal Cove	r: \	20% of To	tal Cover	: 0.4	U .		
1.Open Water				2. Bare ground				HGM Classification: NIA		
Remarks: Bryophytes and L	ichens	may be li	sted in the	e Herbaceous co	lumns			Landform:		
and and a second se										
""Organa 641 J. 19 Samplo"								Local Kellet: CONVEX		
A Award and a sold of the								HUMMOCKI (Sh) 7% E		

#### SOIL

Plot No: ST 012

	cription: D	escribe to the depth	needed	to docun	nent the presence/a	bsence o	of soil inc	dicators	Soil M	ap Unit Name		
	Horizon	Soil Matrix			Redox Featu	ures		121040	HATMA SILT LOAM, UNDULATING			
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod	Texture	Horizon Co	mments	
1-0	Oi											
0-1	A	IOYR 21	100						SIL			
1-8	BSIE	2.5 4/1	60			a set of the second			SAL			
-A-		7.54123/4	10						BL.			
<u> </u>		1082414	30									
8-11	Bw	IOYR414	100						CSAL	-		
11-90	P	IDVR 314	100	the species of	and the fill of the second	in her de stat syne Sterar were wer	and the second se	GR	(SA			
1. 1.9	0	101 1017	100					New Plan	001			
Remarks:	2 FYOTUR	BATEP SPODO	$\leq \circ L$	mineral	soil layer except for	A1, A2, /	A3, A4	<sup>3</sup> Texture Coarse (15-3	Modifiers: Mu Fragments: G 5%), 35-60%	cky (MK), Peaty ravelly (GR), Co Very (V), 60-9	(PT), Permafrost (PF) bbly (CB), Stony (ST) 0% = Extremely (X)	
Histosol o	r Histel (A1)	N	Thick D	ark Surfa	aces (A12)				Hydric	Soils	A 1	
N Histic Epi	pedon (A2)4	2	Alaska	Gleved (	A13)				Pres	ent?	No	
N Black Hist	ic (A3)		Alaska	Redox (A	414)				NRCS Dr	inage Class	MWP	
Undragon		NRCS Drainage Class: ////								1"		
Hydrogen	Suifide (A4,	Alaska Gleyed Pores (A15)     Depth of Organic Soils:								1		
ndicators for	Problemat	tic Hydric Soils <sup>5</sup> (See Page 91/Section 4 for Problematic Hydric Soils Details) Restrictive Layer Type:								NA		
─ Depleted	Depleted Below Dark Surface (A11) 🔣 Alaska Color Change (TA4) Give details of color change Restrictive Layer Depth:									NA		
Nepleted	Matrix (F3)	N	Alaska	Alpine S	wales (TA5)			4	Underlain by	mineral soil v	//chroma of ≤2	
Redox Da     Depleted     Redox De     Redox De     Redox De     Red Pare	rk Surface ( Dark Surfac pression (F8 nt Material (	F6)     N       e (F7)     N       B)     N       F21)     N	Alaska Alaska AA Pos Ponded	Redox w Gleyed v itive (mir I/Floodec	ith 2.5Y Hue w/o Hue 5Y or Redd heral soil, 60% of ho d/High Water Table	er Under prizon 4 ir (12 inche	lying nches th es or hig	ick) her)	Must have H Primary Hydr andscape po problematic	lydrophytic Ve ology, and an osition unless o	getation and appropriate disturbed or	
Very Shal	low Dark Su	rface (F22)	Low Or	ganic Ma	atter/Low Iron/High p	oH Soil/N	ew Wet	and _	─ Other (e)	xplain in rema	rks)	
YDROLOG	βY											
Primary Indica Surface V High Wate	tors (any on Vater (A1) er Table (A2	Wetland Hydro e indicator is sufficien	logy In nt) Inunda Sparse Marl D	dicators tion Visib ely Vegeta	ole on Aerial Imager ated Concave Surfa	y (B7) ice (B8)	Seco NN NN NN	ndary Ind Water-sta Drainage Oxidized Presence	dicators (2 or ained Leaves Patterns (B Rhizosphere	r more required s (B9) 10) es along Living Liron (C4)	d) Roots (C3)(w/in 12	
Water Ma	rks (B1) Deposits (B	2)	Hydrog Dry-Se	en Sulfic ason Wa	le Odor (C1) (w/in 1 iter Table (C2)**	2")	NN	Salt Depo Stunted of	osits (C5) or Stressed F	Plants (D1)		
Image: Construction of the second	Drift Deposits (B3) <ul> <li>Other (Explain in Remarks)</li> <li>Algal Mat or Crust (B4)</li> <li>Iron Deposits (B5)</li> <li>Are Climatic/Hydrologic Conditions on Site</li> <li>Surface Soil Cracks (B6)</li> <li>Typical for this time of Year?</li> </ul> <ul> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3) (w/in 24", note as restrictive lated with the structure of Year?</li> <li>FAC-Neutral Test (D5)</li> </ul>									e as restrictive laye		
Field Observa	ations (inch	es from ground surfa	ce)			Wa	ter Sour	ce:		Wetland Hy	drology Present	
Surface Water	Present?	Yes No _	×	Depth (ir	nches): <u>MA</u>					Λ	10	
Water Table P	resent?	Yes No _	×	Depth (ir	nches):					Dry Seas	on Water Table	
Saturation Pre includes capil	sent? lary fringe)	Yes No _	×	Depth (ir	nches):M	-				SC, Inter	or, Western AK:	
Describe Reco	orded Data (	Episaturation_ stream gauge, monite	oring we	Endosa ell, aerial	turation photos, previous in:	spections	s), if avai	lable:		Mid M **Mineral S **Organic S	ay – late July Soils 12-24 inches Soils 12-40 inches	
Remarks:					The second second				F	AC-Neutral Te ominants > #Fl dd non-domina	st = #OBL+FW J + UPL dominants; ints if tie	

Plot Number	ST012
Wetland Status	Upland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6170912466
Longitude (DD)	-149.602652902



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST013
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PFO4/SS1B
HGM	Slope
Latitude (DD)	61.6174258613
Longitude (DD)	-149.596803754



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST014
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6182700355
Longitude (DD)	-149.589996427



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST015
Wetland Status	RPW
Plot Type	SC
Plot Date	6/9/2022
NWI Classification	R2UBH
HGM	Riverine Channel
Latitude (DD)	61.6191241295
Longitude (DD)	-149.589753565



Photo Type: Hydrology

Direction: NA



Photo Type: Hydrology

Direction: W



Photo Type: Vegetation

Plot Number	ST016
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PSS1/FO1C
HGM	Riverine
Latitude (DD)	61.6193176007
Longitude (DD)	-149.589738094



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST017
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6193920508
Longitude (DD)	-149.589600158



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: S



Photo Type: Vegetation

Plot Number	ST018
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6191942133
Longitude (DD)	-149.590183315



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST019
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6189271062
Longitude (DD)	-149.58956437



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST020
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6138913815
Longitude (DD)	-149.611601005



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Direction: SE



Photo Type: Vegetation

Plot Number	ST020
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6189182507
Longitude (DD)	-149.590088282



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Direction: SE



Photo Type: Vegetation
Plot Number	ST022
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6135213392
Longitude (DD)	-149.618223559



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST023
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6134644957
Longitude (DD)	-149.618587645



Photo Type: Vegetation

Direction: NE



Photo Type: Vegetation

Direction: NW



Photo Type: Vegetation

Plot Number	ST024
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6120788323
Longitude (DD)	-149.622912781



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: S



Photo Type: Vegetation

Plot Number	ST025
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6177889983
Longitude (DD)	-149.588328109



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST026
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6179082931
Longitude (DD)	-149.587090345



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction:  $\ensuremath{\mathsf{N}}$ 



Photo Type: Vegetation

### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 027			
Project: SELDIN	ate: 6/10/22										
Applicant: ADOT + P	F		Inv	vestigators: ZB+AL							
Borough/City/Locatio											
NAD 83, Decimal Degrees	STANTEC										
Latitude: 61.61800	RN				Waters	hed: 1	TSH C	REEK			
Longitude: 149.58	SOGI				Locatio	n Note	S:				
Elevation (ft):											
								SUMMARY OF FINDINGS			
Are "Normal Circumstan	nces"	Presen	t?	YES		F	lydroph	ytic Vegetation Present? VES			
Significantly Disturbed?		VEG	SOILS	S HYDRO				Hydric Soils Present?			
Naturally Problematic?		VEG	SOILS	S HYDRO			Wet	and Hydrology Present? YES			
Remarks:					Is the	e Samp	oled Ar	rea within a Wetland? $YES$			
VEGETATION	T< 1%	ő, P = Pre	sent		SUBREC	GION:					
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	lar plot unless n	oted, absolu	te cover r	ecorded	Dominance Test worksheet:			
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species			
1. PICMAR	FW	Y	5	3.							
2.				4.				Species Across All Strata:			
Total Tree Cover: 5	!	50% of To	otal Cove	er: 2.5	20% of T	otal Cove	r: )	Percent of Dominant Species			
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC:(A/B)			
1. DICMAR	FW	Y	20	9.							
2. BETNED	FU	N	3	10.				Prevalence Index Worksheet			
3. RHOGRO	F	N	3	11.				Total % Cover of:Multiply by:			
4. VACVIT	F	N	wageen	12.				OBL species x 1 =			
5. BETGLA	F	N	1	13.				FACW species $28 \times 2 = 56$			
6. VACOVA	F	N	Ju	14.				FAC species $35 \times 3 = 105$			
7. SALBAR	F	N	7	15.				FACU speciesx 4 =2			
Total Shrub Cover: 28		50% of To	otal Cove	er:  4	20% of To	tal Cover	: 5.6	UPL species x 5 =			
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals: 71 (A) 178 (B)			
1. CALCAN	F	Y	30	14.				021			
2. RUBCHA	FW	N	3	15.				Prevalence Index = B/A =			
3. POTRAL COMPAL	0	N	2	16.				Hydrophytic Vegetation Indicators:			
4. EQUELUS, i)	.0	N	3	17.				Dominance Test is >50%			
5.				18.	5.000			Prevalence Index is ≤3.0			
6.				19.				Morphological Adaptations <sup>1</sup>			
7.				20.				(Provide supporting data in Remarks or on a separate sheet)			
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>			
9.	0.01			22.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.			
10.				23.				Project Vegetation Type			
11.				24.				OBSE			
12.				25.				Cowardin Code: Deel / Emile			
Total Herb Cover: 38	5	50% of To	otal Cove	r: 19	20% of To	tal Cover	: 7.6	HGM Classification:			
1.Open Water 5				2. Bare ground				SLOPE			
Remarks: Bryophytes and L	ichens	may be li	sted in th	e Herbaceous co	olumns	and a state of the		Landform:			
ana ta kasi ana a f								Microtopography: Slope: Aspect			
NG GLAN ( LAST ) INC.								HUMMOCKY (MED) O NA			

Form Modified: Stantec, Alaska, July 2020

### SOIL

# Plot No: ST 027

- / -- -- -- -- -- --

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Profile Desc	cription: De	scribe to the d	epth neede	ed to docun	nent the presence/a	bsence	of soil ind	dicators	Soil N	lap Unit Name	9	
	Horizon	Soil M	latrix		Redox Featu	ures		CRY	AQUEPTS, S	DEPAPSSIONAL, 0-7%		
Depth (in.)	Name	Color (moi	st) %	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mo	d <sup>3</sup> <u>Texture</u>	Horizon C	omments	
Annefician	figure											
10 0	31											
8-9	01											
9-0	Oe											
				-								
						_						
Type: C=Conce	entrations, D=D	epletions, OX=C	xidized Roc	ts, RM = Re	duced Matrix <sup>2</sup> Locati	on: PL=Pa	ore Lining	s, RC=R	oot Channels,	M=Matrix, CS=C	coated Sand Grains	
Remarks:								<sup>3</sup> Textur	e Modifiers: Mu	icky (MK), Peaty	(PT), Permafrost (PF	
								Coars	e Fragments: (	Gravelly (GR), C	obbly (CB), Stony (ST	
vdric Soil In	dicators M	leasure from t	he top of th	ne mineral s	soil laver except for	A1, A2,	A3. A4	(15	-35%), 35-60%	- very (v), ou-s	50% - Extremely (X)	
Y Histosol or	r Histel (A1)		Thick	Dark Surfa	aces (A12)					- Calla		
					A 12)				Pres	c Solis sent?	yes	
HISTIC Epip	bedon (AZ)*		Alask	a Gleyed (	A13)			ŀ	110		1/20	
Black Histi	ic (A3)		Alask	a Redox (A	(14)			+	NRCS Dr	ainage Class:	VPD	
Hydrogen	Sulfide (A4)		_N Alask	a Gleyed F	Pores (A15)				Depth of	Organic Soils:	18+	
ndicators for	Problematic	Hydric Soils	<sup>5</sup> (See Pag	e 91/Sectio	on 4 for Problematic	Hydric	Soils Det	ails)	Restrictiv	e Layer Type:	NA	
	Below Dark S	urface (A11)	Alask	a Color Ch	ange (TA4) Give d	letails of	color ch	ange	Restrictive L	ayer Depth:	NA	
Depleted I	Matrix (F3)		Alask	a Alpine S	wales (TA5)				<sup>4</sup> Underlain b	y mineral soil	w/chroma of ≤2	
N Redox Da	rk Surface (Fi	5)	N Alask	a Redox w	ith 2.5Y Hue			ſ				
	Dark Surface	(57)	Alcol		v/o Huo EV or Podd	orlindo	luing		<sup>5</sup> Must have Hydrophytic Vegetation and			
	Jaik Suilace	(Г7)	Aldsh	a Gleyeu v		er onder	lying		Primary Hydrology, and an appropriate			
Nedox De	pression (F8)		_ <u>~</u> AA P	ositive (mir	teral soil, 60% of ho	orizon 4 i	nches th	ICK)	problematic	Usition unless	disturbed of	
Red Parer	nt Material (F2	21)	Pond	ed/Flooded	I/High Water Table	(12 inche	es or hig	her)				
Nery Shall	ow Dark Surf	ace (F22)	Now Low	Organic Ma	tter/Low Iron/High p	oH Soil/N	lew Wet	and	N Other (e	explain in rema	arks)	
YDROLOG	iΥ											
		Wetland H	lydrology	Indicators			Seco	ndary li	ndicators (2 d	or more require	ed)	
rimary Indicat	tors (any one	indicator is su	fficient)				N	Water-s	tained Leave	s (B9)		
🖉 Surface W	later (A1)		N Inun	dation Visib	le on Aerial Imager	y (B7)	N	Drainag	e Patterns (E	310)		
High Wate	er Table (A2)		N Spar	sely Vegeta	ated Concave Surfa	ce (B8)	N	Oxidize	d Rhizospher	es along Livin	g Roots (C3)(w/in	
Saturation	(A3)		Marl	Deposits (I	315)	0"	MA	Present	ce of Reduce	d Iron (C4)		
Vater Mar Sediment	rks (B1) Deposite (B2)			ogen Sulfic	ter Table (C2)**	2)	$\overline{\nabla}$	Salt De	posits (C5)	Plants (D1)		
V Drift Depo	sits (B3)		N Othe	er (Explain i	n Remarks)		T	Geomo	rohic Position	(D2)		
V Algal Mat	or Crust (B4)			(Explain)			Ň	Shallow	Aquitard (D3	3) (w/in 24", no	ote as restrictive lay	
V Iron Depos	sits (B5)		Are Clim	atic/Hydrol	ogic Conditions on	Site	Y	Microto	pographic Re	lief (D4)		
Surface So	oil Cracks (B6	5)	Typical	for this time	of Year? NO-DRI	er_	Y	FAC-Ne	eutral Test (D	5)		
ield Observa	tions (inches	from ground	surface)		0	Wa	ter Sour	ce:		Wetland Hy	drology Preser	
Surface Water	Present?	Yes 🗡	No	_ Depth (ir	nches):					Y.	65	
Vater Table Pr	resent?	Yes 📉	No	_ Depth (ir	nches):	_				Dry Sea	son Water Table	
Saturation Pres	sent?	Yes 🔜	No	_ Depth (ir	nches):	_				SC, Inte	rior, Western AK:	
nouces capili	ary mige)	Episatura	tion	Endosa	turation					Mid N	/lay – late July	
Describe Reco	orded Data (st	ream gauge, r	monitoring	well, aerial	photos, previous ins	spections	s), if avai	lable:		**Mineral	Soils 12-24 inches	
		and end of the state								Organic	Solis 12-40 Inches	
Remarks:		1 de las								FAC-Neutral Te	est = #OBL+FW	
										add non-domin	o + OPL dominants	

Plot Number	ST027
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PSS4/EM1C
HGM	Slope
Latitude (DD)	61.6180067072
Longitude (DD)	-149.585068083



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: NE



Photo Type: Vegetation

### WETLAND DETERMINATION DATA FORM - Alaska Region

								Plot No: ST 028	
Project: SELDON	Project: SELDON RD PHASE II Date: 6/10/22								
Applicant: ADOT+P		vestigators: 2B+AL							
Borough/City/Locatio									
NAD 83, Decimal Degrees				STANTEC					
Latitude: 61.6179	05	N			Waters	hed:			
Longitude: 149.5%	352	58W			Locatio	n Note	S: HIS	TORICALLY DISTURBED - APPEALS	
Elevation (ft):					TO HA	VE BER	N CLÈI	ARED KOGGED 10-20 YRS AGO	
-								SUMMARY OF FINDINGS	
Are "Normal Circumsta	nces"	Presen	t?	YES		ŀ	lydroph	ytic Vegetation Present?	
Significantly Disturbed?	>	VEG	SOILS	6 HYDRO				Hydric Soils Present?	
Naturally Problematic?		VEG	SOILS	6 HYDRO			Wet	land Hydrology Present? YES	
Remarks:					Is the	e Samp	oled Ar	rea within a Wetland?	
VEGETATION	T< 1%	%, P = Pre	sent		SUBREC	GION:			
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	lar plot unless no	oted, absolu	te cover r	ecorded	Dominance Test worksheet:	
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species That Are OBL, FACW, or FAC: (A)	
1.				3.				Total Number of Deminent	
2.				4.				Species Across All Strata:	
Total Tree Cover:		50% of To	otal Cove	r:	20% of T	otal Cove	er:	Percent of Dominant Species	
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC: _/UO(A/B)	
1. PICMAR	FW	N	5	9.					
2. BETNED	Fu	N	3	10.				Prevalence Index Worksheet	
3. RHOGRO	E	Y	20	11.				Total % Cover of:Multiply by:	
4. VACUIT	F	N	10	12.				OBL species x 1 =	
5. VACULI	É	V	15	13.				FACW species x 2 = /6	
6. RETGLA	D		E	14.				FAC species $60 \times 3 = 180$	
7.	5		2	15.				EACH appaging 3 x 4 = 12	
Total Shrub Cover: 58		50% of To	otal Cove	: 29	20% of To	tal Cover	r: )) 6		
Herbaceous Stratum	IND	DOM	Cover	13.			(1.0	UPL species $x_5 = 0$	
1 RUBCHA	52.	Y	2	14				Column Lotals: _7 (A) _208 (B)	
2 041044	FW	V	10	15				Dravelance Index - P/A 293	
3 EQUENT	F		10	16					
A AUAANIC	F		-	17				Hydrophytic Vegetation Indicators:	
5	PA	10	1	18				Dominance Test is >50%	
6				10.				Prevalence index is ≤3.0	
7				20				(Provide supporting data in	
8				20.				Remarks or on a separate sheet)	
0.				21.				<sup>1</sup> Indicators of hydric soil and wetland hydrology	
9.				22.				must be present unless disturbed or problematic.	
10.				23.				<u>Troject Vegetation Type</u>	
12				24.			page 1	LOI	
Tatal Hart Courses			4-1.0	20. MOSS		25 4745350PME3300	30	Cowardin Code: PSS1 B	
1 Oran Water		ou% of To	otal Cover	6.5	20% of To	tal Cover	: dit	HGM Classification:	
Remarks: Bryonhytes and I	ichene	may be li	sted in the	2. Bare ground	lumne			JLOYE	
Listiano, Diyophytes and L		may be li			annia			TERRACE	
2년 19년 1월 2일, 19년 2월 - 19년 19년 19년 2월 19년								Local Relief: FLAT	
								Microtopography: Slope: Aspect:	
								MUMMOCEY (SW) 1/2 AJ	

Form Modified: Stantec, Alaska, July 2020

### SOIL

Plot No: ST 028

Profile Des	cription: De	escribe to the depth	ribe to the depth needed to document the presence/absence of soil indicators Soil M							lap Unit Name		
	Horizon	Soil Matrix	-		Redox Feature	s		CRYA	QUEPTS,	Harizon Commonto		
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod	Texture	Horizon Co	omments	
11-8	Oi											
8-0	Oe											
0-2	A	104R2/1	100	0			-		Sil			
2-8	AC.	10 YR 2/1	100					GR	- CSAL	din .		
			ad Poots	PM - Rodi	and Matrix 21 eastion			PC-Po	t Channels I	M-Matrix CS-C	aatad Sand Crains	
Pomorko:	entrations, D=L	Depletions, OX=Oxidizi	ed Roots,	, RIVI = Redi	uced Matrix -Location	PL=P0	re Linings	<sup>3</sup> Texture	Modifiers: Mu	cky (MK), Peaty	(PT), Permafrost (PF)	
Remarks.								Coarse	Fragments: C	Gravelly (GR), Co	obbly (CB), Stony (ST)	
udaia Cail I	- dia starra 1							(15-3	5%), 35-60%	= Very (V), 60-9	0% = Extremely (X)	
yaric Soli li	ndicators	vieasure from the to	p of the	mineral so	bil layer except for A	1, AZ, A	A3, A4					
Histosol o	r Histel (A1)	~	Thick D	Dark Surfac	tes (A12)				Hydri	c Soils sent?	YES	
Black Hist	tic (A3)	2 2	Alaska	Redox (A	13)			-	NRCS Dr	ainage Class:	VPD	
Hydrogen	Sulfide (A4)	N	Alaska	Gleved Po	ores (A15)			-	Depth of	Organic Soils:	11	
ndicators for	Problemati	c Hydric Soils⁵ (Se	e Page	91/Section	4 for Problematic H	lydric S	oils Deta	ails)	Restrictiv	e Layer Type:	NA	
	Below Dark S	Surface (A11)	Alaska	Color Cha	nge (TA4) Give det	ails of	color cha	inge F	Restrictive L	ayer.Depth:	NIA	
N Depleted	Matrix (F3)	2	Alaska	Alpine Sw	ales (TA5)			4	Underlain b	y mineral soil v	w/chroma of ≤2	
Nedox Da	irk Surface (F	-6)	Alaska	Redox wit	h 2.5Y Hue			5	Must have b	hydrophytic Ve	actation and	
<u>∼</u> Depleted	Dark Surface	e (F7)	Alaska	Gleyed w/	o Hue 5Y or Redder	Under	lying	F	rimary Hyd	rology, and an	appropriate	
N Redox De	pression (F8		AA Pos	sitive (mine	eral soil, 60% of horiz	zon 4 ir	nches this	ck) la	andscape p	osition unless	disturbed or	
Red Pare	nt Material (F	21)	Pondeo	d/Flooded/	High Water Table (1)	2 inche	es or high	ier)				
Very Shal	low Dark Sur	face (F22) N	Low Or	ganic Mat	ter/Low Iron/High pH	Soil/N	ew Wetla	and _	N Other (e	xplain in rema	irks)	
YDROLOG	ΞY			-1:			0		1		-0	
Drimary Indica	tors (any one	wetland Hydro	nt)	dicators			Secor N v	Nator st	aicators (2 o	r more require	a)	
N Surface W	Vater (A1)		Inunda	tion Visible	e on Aerial Imagery (	B7)	Νr	)rainage	Patterns (P	10)		
Y High Wate	er Table (A2)	N	Sparse	elv Vegetat	ed Concave Surface	e (B8)		Dxidized	Rhizospher	es along Living	Roots (C3)(w/in 1:	
Saturation	n (A3)	A.	Marl D	eposits (B	15)	. ,	NAF	resence	of Reduce	d Iron (C4)		
V Water Ma	rks (B1)	Ň	Hydrog	gen Sulfide	Odor (C1) (w/in 12"	)	NS	Salt Dep	osits (C5)			
V Sediment	Deposits (B2	2)	Dry-Se	eason Wate	er Table (C2)**		NS	Stunted of	or Stressed	Plants (D1)		
V Drift Depo	osits (B3)	N	Other (	(Explain in	Remarks)		N $G$	Geomorp	hic Position	(D2)		
V Algal Mat	or Crust (B4)	)			·		NS	Shallow A	Aquitard (D3	5) (w/in 24", no	te as restrictive laye	
V Iron Depo	sits (B5)	Ar	e Climat	tic/Hydrolo	gic Conditions on Sil	te	N	Aicrotop	ographic Re	lief (D4)		
Surface S	oil Cracks (B	(6) ly	pical for	this time of	of Year?	Mat	F	AC-Neu	itral Test (D	5)	dualary Duana	
Surface Water	Dresent?	Vec No	(Ce)	Depth (inc	hes): A)/A	vva	ler Sourc	e.		wetland Hy	arology Present	
Nator Table D	resent?	Ves X No		Depth (inc	thes): 12	-				Y	ED .	
Saturation Pre	sent?	Yes X No		Depth (inc	ches): 6	-				Dry Sea SC. Inter	son Water Table	
includes capil	lary fringe)	Enjacturation		Endoset	vication X					Mid M	lav late lub	
Describe Reco	orded Data (s	tream gauge, monit	oring we	ell, aerial p	hotos, previous insp	ections	), if availa	able:		**Mineral	Soils 12-24 inches	
	-									**^	Calle 10 10 in the	
									12	**Organic	Soils 12-40 inches	

Plot Number	ST028
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PSS1B
HGM	Slope
Latitude (DD)	61.6179034983
Longitude (DD)	-149.585234939



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 029	
Project: SELDON PD PHASE II Date: 6/10/22									
Applicant: ADOT+PF Investigators: ZB-IAL									
Borough/City/Locatio	n: N								
NAD 83, Decimal Degrees				STANTEC					
Latitude: 61.617	676	2N			Waters	hed:	FISH C	REEK	
Longitude: 149.5	854	28W			Locatio	n Note	S: HIST	DEICALLY DISTURGED - CLEARED/LOGGE	Ð
Elevation (ft):									
				1	1			SUMMARY OF FINDINGS	
Are "Normal Circumsta	nces"	Presen	t?	162		F	lydroph	ytic Vegetation Present? Yes	
Significantly Disturbed?	)	VEG	SOIL	S HYDRO				Hydric Soils Present? No	
Naturally Problematic?		VEG	SOIL	S HYDRO			Wet	and Hydrology Present? $N_{ m o}$	
Remarks:		1	. E.,		Is the	e Samp	oled Ar	ea within a Wetland?	
VEGETATION	T< 1%	P = Pre	sent		SUBREC				
Tree Stratum DBH ≥ 3 inch	1 - 17	1/10	acre circu	lar plot unless no	oted, absolu	te cover r	ecorded	Dominance Test worksheet:	
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species	
1.				3				That Are OBL, FACW, or FAC:	_(A)
2				4				Total Number of Dominant	
Total Tree Cover:		50% of T	otal Cove	т. 	20% of Tr	atal Covo		Species Across All Strata:	_(B)
Sanling/Shrub Stratum			Cover	0	20% 0110		1.	Percent of Dominant Species	
1 President	IND	DOM	Cover	o.				That Are OBL, FACVV, or FAC:()	vв)
1. DETNEO	1-4	N	10	9.				Prevalence Index Worksheet	
2. PICGLA	FU	N	5	10.				Total % Cover of: Multiply by:	
3. RHOGRO	F	Y	30	11.					
4. VACVIT	F	N	Ŧ	12.					
5. VACULI	F	N	5	13.				FACW speciesx 2 =	
6.				14.				FAC species $57x3 = 171$	
7.	0.00			15.				FACU species $17x4 = 68$	
Total Shrub Cover: 57	ł	50% of To	otal Cove	r: 28.5	20% of To	tal Cover	: 11.4	UPL species $\bigcirc$ x 5 = $\bigcirc$	
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals: 74 (A) 239 (B)	
1. CALCAN	F	Y	15	14.				0.00	
2. CHAANG	FU	N	2	15.				Prevalence Index = $B/A = 3.73$	
3. GEOLIN	FU	N	T	16.				Hydrophytic Vegetation Indicators:	
4. EQUSTL	F	N	T	17.				Dominance Test is >50%	
5.				18.				Prevalence Index is ≤3.0	
6.				19.				Morphological Adaptations <sup>1</sup>	
7.				20.				(Provide supporting data in Remarks or on a separate sheet)	
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>	
9.				22.				Indicators of hydric soil and wetland hydrolo	gy
10.				23				Project Vegetation Type	·
11				24				1.)	
12				25			-	WINF	
Total Harb Cover		0% of To	tal Caus	20. MOSS	20% of T-		5	Cowardin Code:	
1 Open Water	5		Jai Cove	2 Para arrival	20% 01 10	lai Gover	2.7	HGM Classification:	
Remarks: Bryophytes and L	ichens	may be li	sted in th	2. Bare ground	umns				
	2							TERMACE	
								Local Relief: FLAT	
								Microtopography: Slope: Aspect:	
								HUMMOCKY (SM) D NH	

#### SOIL

Plot No: ST 029

Profile Des	cription: D	escribe to the depth	needed	to docun	nent the presence/abs	ence o	of soil indi	icators	Soil M	ap Unit Name		
	Horizon	Soil Matrix			Redox Feature	s		CRYA	auer 15,	, DEPRESSIONAL, 0-7%		
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	mments	
6-3	0;											
3-0	Oo.										and the color	
0-2	A	INYR2/2	100	_					SIL			
2-7	RC	2.5 × 4/3	100	-				>	CSAL			
7-16	C	10 YR4/3.5	100	-		antonia kantona t	~		SA			
<sup>1</sup> Type: C=Conc	centrations, D=	Depletions, OX=Oxidize	d Roots	RM = Red	duced Matrix <sup>2</sup> Location:	PL=Pc	ore Linings,	RC=Roo	t Channels, N	1=Matrix, CS=Co	pated Sand Grains	
Remarks: Hydric Soil I	ndicators	Measure from the top	o of the	minerals	soil layer except for A1	, A2, /	A3, A4	<sup>3</sup> Texture I Coarse (15-35	Modifiers: Mu Fragments: G 5%), 35-60%	cky (MK), Peaty ravelly (GR), Co = Very (V), 60-9	(PT), Permafrost (PF)   bbly (CB), Stony (ST) 0% = Extremely (X)	
Histosol o	or Histel (A1)	N	Thick D	ark Surfa	aces (A12)				Hydric	Soils		
Histic Epi	ipedon (A2)4	2	Alaska	Gleyed (	A13)				Pres	ent?	NO	
Black His	tic (A3)	N	Alaska	Redox (A	(14)				NRCS Dra	ainage Class:	MWD	
Hydrogen	n Sulfide (A4)	~	Alaska	Gleyed F	Pores (A15)				Depth of C	Organic Soils:		
Indicators for	r Problemat	ic Hydric Soils⁵ (See	Page	91/Sectio	on 4 for Problematic H	ydric S	Soils Deta	ils)	Restrictive Layer Type: NIA			
N Depleted	Below Dark	Surface (A11)	Alaska	Color Ch	ange (TA4) Give deta	ails of	color cha	nge R	Restrictive Layer Depth: MIA-			
No Depleted	Matrix (F3)	, N.	Alaska	Alpine S	wales (TA5)			4	Jnderlain by	mineral soil v	//chroma of ≤2	
Nedox Da	ark Surface (	F6)	Alaska	Redox w	ith 2.5Y Hue						5.963VT	
N Depleted	Dark Surface	e (F7)	Alaska	ska Gleyed w/o Hue 5Y or Redder Underlying Prima						ust have Hydrophytic Vegetation and imary Hydrology, and an appropriate		
Nedox De	epression (F8	3) ~	AA Pos	itive (min	eral soil, 60% of horiz	on 4 ir	nches thic	ck) la	landscape position unless disturbed or			
~ Red Pare	ent Material (I	F21)	Pondeo	/Flooded	//High Water Table (12	2 inche	es or high	er) p	roblematic			
Nery Sha	llow Dark Su	rface (F22)	Low Or	ganic Ma	tter/Low Iron/High pH	Soil/N	ew Wetla	ind	Other (explain in remarks)			
HYDROLOG	GY											
		Wetland Hydro	loav In	dicators			Secon	ndary Ind	icators (2 or	more required	d)	
Primary Indica	ators (any on	e indicator is sufficier	nt)				NW	Vater-sta	ined Leaves	s (B9)	-,	
N Surface V	Water (A1)	$\sim$	Inunda	tion Visib	le on Aerial Imagery (I	B7)	ND	rainage	Patterns (B	10)		
M High Wat	er Table (A2)	N	Sparse	ely Vegeta	ated Concave Surface	(B8)	NO	Oxidized Rhizospheres along Living Roots (C3)(w/in 12"				
M Saturation	n (A3)	$\sim$	Marl D	eposits (E	315)		MAP	resence	of Reduced	I Iron (C4)		
Water Ma	arks (B1)		Hydrog	gen Sulfid	le Odor (C1) (w/in 12")		<u>∧</u> s	Salt Deposits (C5)				
N Drift Den	t Deposits (B.	$\frac{10}{\Lambda}$	Other	eason vva	ter Table (G2)**		No	unted or Stressed Plants (D1)				
N Algal Mat	or Crust (B4	.)	Other		in Remarks/		Ns	Shallow A	morphic Position (D2) llow Aquitard (D3) (w/in 24" note as restrictive lave			
V Iron Depo	osits (B5)	Are	Climat	ic/Hydrol	ogic Conditions on Sit	е	NN	licrotopo	opographic Relief (D4)			
N Surface S	Soil Cracks (E	36) Тур	oical for	this time	of Year? NO - PAIC	2	F	AC-Neu	tral Test (D5	j)		
Field Observ	ations (inche	es from ground surfac	ce)			Wa	ter Source	e:		Wetland Hy	drology Present?	
Surface Wate	r Present?	Yes No _	×	Depth (in	iches):	-					No	
Water Table F	Present?	Yes No _	×	Depth (in	iches): NH	-				Dry Seas	on Water Table	
Saturation Pre (includes capi	esent? illary fringe)	Yes No _	×	Depth (in	nches): <u>NIM</u>	•	SC, Interior, Western A			or, Western AK:		
Describe Dr.	arded Data (	Episaturation_	rine	Endosat	uration		) if	able		Mid M	ay - late July	
Describe Rec	orded Data (s	stream gauge, monito	ning we	an, aerial	photos, previous inspe	clions	), ir availa	able:		**Organic S	Soils 12-24 inches	
Remarks:		reconcernation of the reconcernation of the local reconcernation of the local of the							Fd	AC-Neutral Tes ominants > #Fl dd non-domina	st = #OBL+FW J + UPL dominants; nts if tie	
								-				

Plot Number	ST029
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6176703561
Longitude (DD)	-149.585404785



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: NE



Photo Type: Vegetation

Plot Number	ST030
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PSS1C
HGM	Slope
Latitude (DD)	61.6177549146
Longitude (DD)	-149.584589583



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST031
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1C
HGM	Slope
Latitude (DD)	61.6177694599
Longitude (DD)	-149.584070883



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST032
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6179375685
Longitude (DD)	-149.583481416



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST033
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6180695903
Longitude (DD)	-149.582400259



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

#### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 034			
Project: SELDON RD PHASE II								ate: 6/10/22			
Applicant: ADOT+PF								vestigators: ZB+AL			
Borough/City/Location: MAT-SM											
NAD 83, Decimal Degrees								STANTEC			
Latitude: 61.6185	33.	N			Waters	hed:	EISH I	CREEK			
Longitude: 149.58	:020	25 W			Locatio	n Note	S:				
Elevation (ft):		9									
								SUMMARY OF FINDINGS			
Are "Normal Circumsta	nces"	Presen	t?	Yose		F	lydroph	ytic Vegetation Present?			
Significantly Disturbed?	>	VEG	SOILS	HYDRO				Hydric Soils Present?			
Naturally Broblomatic?		VEC	8011.0				14/ot	lond Hydrology Present?			
Pomarka:		VEG	SUILS	S HIDKO			vvel				
Remarks.	r.				Is the	e Samp	oled Ar	rea within a Wetland?			
VEGETATION	T< 1%	6, P = Pre	sent		SUBREC	GION:					
Tree Stratum DBH ≥ 3 inch	13 101	1/10	acre circu	lar plot unless n	oted, absolu	te cover r	ecorded	Dominance Test worksheet:			
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species			
1. BETNED	Cia	Y	2	3.				(A)			
2.	ry			4				Total Number of Dominant			
Total Tree Cover:	L	50% of Tr	tal Covo	r ) C	20% of T	tal Cours	- ~ /	Species Across All Strata:(B)			
Sanling/Shrub Stratum			Caver	• 1.2	20% 0110		0,6	Percent of Dominant Species			
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC:(A/B)			
1. BETNER	FU	7	12	9.				Prevalence Index Worksheet			
2. PICGLA	FU	M	7	10.				Total % Cover of Multiply by:			
3. RHOGRO	F	Y	10	11.							
4. VACVIT	F	N	5	12.				OBL speciesX 1 =			
5. VACULI	P	N	5	13.				FACW species x 2 =O			
6.				14.				FAC species $20 \times 3 = 60$			
7.				15.				32 1 120			
Total Shrub Cover: No.		50% of To	tal Cove	DUE	20% of To	tal Cover		FACU species X 4 =			
Herbacoous Stratum	IND	DOM	Cover	12	20/00110			UPL speciesx 5 =			
1 A A A A A A A A A A A A A A A A A A A	IND	DOIVI	Cover	13.				Column Totals: <u>50</u> (A) <u>180</u> (B)			
CHAANG	FU	7	3	14.				21			
2. CALCAN	F	N	1	15.				Prevalence Index = B/A = b			
3. EQUSYL	F	N	T	16.				Hydrophytic Vegetation Indicators:			
4. COREAN	FU	Y	5	17.				Dominance Test is >50%			
5. RUBCHA	Fro	N	T	18.		10000000		Prevalence Index is ≤3.0			
6. GEOLIV	EN	N		19.				Morphological Adaptations <sup>1</sup>			
7.				20.				(Provide supporting data in Remarks or on a senarate sheet)			
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>			
9				22				<sup>1</sup> Indicators of hydric soil and wetland hydrology			
10				22.				must be present unless disturbed or problematic.			
10.				23.							
11.				24.				WMt			
12.				25.				Cowardin Code:			
Total Herb Cover: 9 50% of Total Cover: 4,5 20% of Total Cover: 1,8											
1.Open Water				2. Bare ground				now classification:			
Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns								Landform:			
			1000					(0.000100			
								Local Relief: CONVER			
								Siope: Aspect:			
								rull of 1			

S	0	I	L
Э	v	I	_

Plot No: ST 3

	Horizon	Soil Matrix			Redox Featu	ires		CKYAT	HOWEPPS, DEPRESSIONAL, 0-7%		
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	mments
3-0	Qe										
0-2	A	10YR 2/2	100					8	SIL		
2-5	E	2.544/1	1.00		ومعروف المراجع والمراجع				SIL		
5-10	Bs	7.5723/4	100		ana ana amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o a	analista en la maina en casa de			SAL		
0-28	BE	10YR3/4	100	Gamad	e a ferra : ena colonie conscienta machina del al suo har calmane del producto del producto del producto del producto del p	adit familianda Chorina milita	Constantion	GR	LOSA		
Type: C=Conce	entrations, D=	Depletions, OX=Oxidize	ed Roots,	RM = Red	uced Matrix <sup>2</sup> Locatio	on: PL=Pc	re Linings	s, RC=Roo	t Channels, M	=Matrix, CS=Co	ated Sand Grains
Remarks: ydric Soil Ir MHistosol o	Spod os ndicators or Histel (A1)	Measure from the to	p of the Thick D	mineral s bark Surfa	oil layer except for . ces (A12)	A1, A2, /	A3, A4	Coarse I (15-35	Fragments: Gr (3%), 35-60% =	avelly (GR), Co Very (V), 60-90	bbly (CB), Stony (ST) % = Extremely (X)
	pedon (A2)4	A	Alaska	Gleyed (A	(13)	•			Prese	ent?	No
M Black Hist	tic (A3)	N	Alaska	Redox (A	14)				NRCS Dra	inage Class:	MWD
M Hydrogen	Sulfide (A4)	N	Alaska	Gleyed P	ores (A15)				Depth of O	rganic Soils:	3"
ndicators for	Problemat	i <mark>c Hydric Soils</mark> ⁵ (Se	e Page	91/Sectio	n 4 for Problematic	Hydric S	oils Deta	ails)	Restrictive	Layer Type:	NIA
V Depleted	Below Dark	Surface (A11)	Alaska	Color Cha	ange (TA4) Give d	etails of	color cha	ange R	estrictive La	yer Depth:	NIA
	Matrix (F3)	N	Alaska	Alpine Sv	vales (TA5)			41	Inderlain by	mineral soil w	/chroma of ≤2
$\frac{1}{\sqrt{2}} \text{ Depleted}$ $\frac{\sqrt{2}}{\sqrt{2}} \text{ Redox De}$ $\frac{\sqrt{2}}{\sqrt{2}} \text{ Red Parents}$	nk Surface ( Dark Surfac pression (Fantantian) nt Material (I	e (F7) <u>N</u> 3) <u>F21) <u>N</u></u>	Alaska Alaska AA Pos Ponded	Redox wi Gleyed w itive (min I/Flooded	in 2.5Y Hue /o Hue 5Y or Redd eral soil, 60% of ho /High Water Table (	er Under rizon 4 ir (12 inche	lying nches thi es or high	ck) la ner)	Aust have H rimary Hydro ndscape po roblematic	ydrophytic Ve blogy, and an sition unless d	getation and appropriate listurbed or
Very Shal	low Dark Su	rface (F22)	Low Or	ganic Mat	ter/Low Iron/High p	H Soil/N	ew Wetla	and _	VOther (ex	plain in remar	ks)
YDROLOG	SY			P							
Primary Indica Surface W High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Origan Depo Surface S	ttors (any on Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B osits (B3) or Crust (B4) sits (B5) oil Cracks (E	e indicator is sufficie N N N N N N N N N N N N N	nt) Inunda Sparse Marl Do Hydrog Dry-Se Other ( e Climat pical for	tion Visibl ly Vegeta eposits (B len Sulfid ason Wat Explain ir ic/Hydrolo this time	e on Aerial Imagery ted Concave Surfa 15) e Odor (C1) (w/in 1) er Table (C2)** Remarks) ogic Conditions on S of Year? <u>No - Ot</u>	y (B7) ce (B8) 2") Site		Water-sta Drainage Dxidized I Presence Salt Depo Stunted o Geomorpi Shallow A Microtopo FAC-Neut	ined Leaves Patterns (B1 Rhizosphere of Reduced sits (C5) r Stressed P nic Position ( quitard (D3) graphic Reli tral Test (D5	(B9) 0) s along Living Iron (C4) lants (D1) (D2) (w/in 24", not ef (D4) )	Poots (C3)(w/in 12
Field Observa	ations (inch	es from ground surfa	ce)			Wat	er Sourc	ce:	1	Netland Hyd	drology Present
Surface Water	Present?	Yes No	X	Depth (in	ches): MA	-				A	10
Saturation Pre includes capil	esent? lary fringe)	Yes No	X	Depth (in	ches): N/A	_				Dry Seas SC, Interi	on Water Table or, Western AK:
Describe Reco	orded Data (	Episaturation_ stream gauge, monit	oring we	Endosati ell, aerial p	uration hotos, previous ins	spections	), if avail	able:		Mid Ma **Mineral S **Organic S	ay – late July oils 12-24 inches oils 12-40 inches
(emarks:									F/ do ad	AC-Neutral Tes ominants > #FL dd non-domina	t = #OBL+FW J + UPL dominants; nts if tie

Plot Number	ST034
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6185314337
Longitude (DD)	-149.580182032



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST035
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1/SS1C
HGM	Slope
Latitude (DD)	61.6186480754
Longitude (DD)	-149.58017876



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST036
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1/SS1C
HGM	Slope
Latitude (DD)	61.6183817144
Longitude (DD)	-149.577899389



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Direction: S



Photo Type: Vegetation

Plot Number	ST037
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6183864204
Longitude (DD)	-149.577605219



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST038
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.617268243
Longitude (DD)	-149.570191441



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: NW



Photo Type: Vegetation

Direction: SE

### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 039	
Project: SELDON RD & #ASE 1/						Da	ate: 6/10/22		
Applicant: Aport+	PF	1010					Inv	vestigators: ZB+AL	
Borough/City/Location: MT-SA									
NAD 83, Decimal Degrees								STANTEC	
Latitude: 61, 6175	801	)			Waters	shed: P	ISH CR	(C)-	
Longitude: 149.57	7000	NEW			Locatio	on Note	S:		
Elevation (ft):									
								SUMMARY OF FINDINGS	
Are "Normal Circumsta	nces"	Presen	t?	YES		F	lydroph	ytic Vegetation Present? VES	
Significantly Disturbed?	)	VEG	SOILS	S HYDRO				Hydric Soils Present? Mo	
Naturally Problematic?		VEG	SOILS	S HYDRO			Wet	land Hydrology Present? No	
Remarks:					ls th	e Samp	oled Ar	rea within a Wetland? No	
VEGETATION	T< 1%	ő, P = Pre	sent		SUBRE	GION:			
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	lar plot unless n	oted, absolu	ute cover r	ecorded	Dominance Test worksheet:	
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species	
1. PICMAR	FW	- Y -	15	3.				Total Number of Dominant	
2. POPTRE	PU	Y	15	4.				Species Across All Strata:(B)	
Total Tree Cover: 36	ł	50% of T	otal Cove	r: 15	20% of T	otal Cove	er: 6	Percent of Dominant Species	
Sapling/Shrub Stratum	IND	DOM	Cover	8.				That Are OBL, FACW, or FAC: $2 + (A/B)$	
1. ROSACI	FU	N	3	9.					
2. POPTRE	FU	Y	5	10.				Prevalence Index Worksheet	
3. RHOGRO	F	V	waray Talaa	11.				Total % Cover of: Multiply by:	
4. IINBOR	FU	N	2	12.				OBL species x 1 =	
5. VACVIT	F	N	and the	13.				FACW speciesx 2 =0	
6. PICMAR	FW	V	5	14.				FAC speciesx 3 =	
7.		1		15.				FACU species $29 \times 4 = 1/6$	
Total Shrub Cover: 22	ł	50% of Te	otal Cove	r:  )	20% of To	otal Cover	r: 4,4	LIPI species O x 5 = 6	
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals: $57$ (A) $180$ (B)	
1. GEOLIV	FU	V	4	14.					
2. CALCAN	F	Y	1	15.				Prevalence Index = $B/A = 3.16$	
3. FOUARY	F	N	1	16.				Hydrophytic Vegetation Indicatore	
4. MAANG	FU	N	mp	17.				Dominance Test is >50%	
5.	1-1			18.				$\sim$ Prevalence Index is $\leq 3.0$	
6.				19.				Morphological Adaptations <sup>1</sup>	
7.				20.				(Provide supporting data in	
8.				21.				Problematic Hydrophytic Vegetation <sup>1</sup>	
9.	_			22.				Indicators of hydric soil and wetland hydrology	
10.				23.				Project Vegetation Type	
11.				24.		-		ANG	
12.				25. M. S.	820524	NAR BERLEVILLE	30	Cowardin Code:	
Total Herb Cover: 5	5	50% of To	otal Cove	r: 2.5	20% of To	otal Cover	: \	U	
1.Open Water				2. Bare ground				HGM Classification: NIA	
Remarks: Bryophytes and L	ichens	may be li	sted in the	e Herbaceous co	olumns			Landform:	
n kan se san ang mga kana sa sa sa								16 levier	
an and the fail is shown as a mapping the								Local Relief: CONVER	
ACTIVE ACTIVE ACTIVE ACTIVE ACTIVE								CLAN SIOPE: Aspect:	

S	0	I	L
-	-	-	_

# Plot No: ST 039

. . ....

Profile Des	cription: D	escribe to the depth n	eeded	to docum	nent the presence/a	absence o	of soil indi	cators	Soil N	lap Unit Name	9	
	Horizon	Soil Matrix Redox Features CH/Aquer							aller TS, D	TS, DEPRESSIONAL, 0-7%		
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	omments	
A=3-0	0-1											
0-6	E/BS	2514/1	50	-				-	SIL			
		7.54123/4	20	-								
		10YR 4/2	30				AND MILLION OF					
6-10	Bu	10YR 4/4	100		and the second	hali yala meterika kata	an kan pantan ta an ta bata ya	-	CSAL			
10-15	C	10 YR 3/4	100	(Lassance)	an an teacher is success an teacher biological to compute vectories o		a tara cifin (1990) (alar	VCB	SAL			
<sup>1</sup> Type: C=Conce	entrations, D=	Depletions, OX=Oxidized	Roots,	RM = Rec	luced Matrix <sup>2</sup> Locati	on: PL=Po	re Lininas.	RC=Root	Channels, I	/=Matrix_CS=C	oated Sand Grains	
Remarks:	udicators	Massure from the top	of the	minerals	oil laver event for	A1 A2 /	3	Texture M Coarse F (15-35	Nodifiers: Mu ragments: G %), 35-60%	cky (MK), Peaty ravelly (GR), Co = Very (V), 60-9	(PT), Permafrost (PF)   bbbly (CB), Stony (ST) 0% = Extremely (X)	
Nulistaal			biele D			A1, A2, F	A3, A4					
N Histic Epir	(A1)	NA	laska	Gleved (A	A12)				Hydric Pres	soils ent?	No	
N Black Hist	ic (A3)	NA	laska	Redox (A	.14)				NRCS Dr	ainage Class:	MWD	
N Hydrogen	Sulfide (A4)	NA	laska	Gleyed P	ores (A15)				Depth of (	Organic Soils:	3"	
Indicators for	Problemati	ic Hydric Soils <sup>5</sup> (See	Page	91/Sectio	n 4 for Problematic	Hydric S	oils Detai	ls)	Restrictive	e Layer Type:	NIA	
N Depleted	M Depleted Below Dark Surface (A11) M Alaska Color Change (TA4) Give details of color change Restrictive Laver Depth:								NIA			
M Depleted Matrix (F3) Alaska Alpine Swales (TA5) <sup>4</sup> Underlain by mineral soil w/chroma of ≤2												
Nedox Da								actation and				
N Depleted [	Dark Surface	e (F7) 🔨 A	laska	Gleyed w	/o Hue 5Y or Redd	er Underl	ying	Pr	imary Hydi	ology, and an	appropriate	
M Redox De	pression (F8	3) <u>N</u> A	A Pos	itive (min	eral soil, 60% of ho	orizon 4 in	ches thick	k) lai	ndscape po	sition unless of	disturbed or	
N_Red Parer	nt Material (F	=21) <u>//</u> P	onded	/Flooded	High Water Table	(12 inche	s or highe	er)				
Very Shall	ow Dark Su	rface (F22)	ow Org	ganic Mat	tter/Low Iron/High p	oH Soil/Ne	ew Wetlar	nd 🔼	Other (e	xplain in rema	rks)	
HYDROLOG	Y											
Primany Indicat		Wetland Hydrold	ogy Ind	dicators			Second	dary Indi	cators (2 or	more required	d)	
M Surface W	lors (any one		) nundat	tion Visibl	e on Aerial Imagon	(P7)	ND	ater-stai	ned Leaves	s (B9)		
N High Wate	r Table (A2)	N	Sparse	lv Vegeta	ted Concave Surfa	ce (B8)	No	kidized F	hizosoher	s along Living	Roote (C3)(w/in 12")	
N Saturation	(A3)	NN	Aarl De	eposits (B	15)	00 (20)	MA Pr	esence	of Reduced	Iron (C4)	110013 (00)(Will 12)	
N Water Mar	ks (B1)	NE	lydrog	en Sulfide	e Odor (C1) (w/in 1	2")	N Sa	alt Depos	sits (C5)			
N Sediment	Deposits (B2	2) <u>N</u> E	Dry-Sea	ason Wat	er Table (C2)**	ĺ.	N St	unted or	Stressed F	Plants (D1)		
N Drift Depos	<i>N</i> Drift Deposits (B3) <i>N</i> Other (Explain in Remarks) <i>N</i> Geomorphic Position (D2)											
NAIgal Mat o	or Crust (B4)	)					N St	allow Ad	quitard (D3)	(w/in 24", not	e as restrictive layer)	
N Iron Depos	sits (B5)	Are	Climati	c/Hydrold	gic Conditions on	Site	<u>∧</u> Mi	crotopog	graphic Rel	ief (D4)		
N Surface So	oil Cracks (B	6) Typi	cal for	this time	of Year? No- DR	(KC) Marrie	FA	AC-Neutr	al Test (D5	j)		
Field Observa	tions (inche	es from ground surface	e)		A	Wate	er Source	:		Wetland Hy	drology Present?	
Mator Table D	Present?	Yes No	¢	Depth (in	cnes): <u>MIM</u>					l	Vo	
Seturation Draw	esent?	Yes No	-	Depth (ind	ches): <u>AUA</u>					Dry Seas	on Water Table	
(includes capill	ary fringe)	res No		Depth (Ind	cnes):	-				SC, Interi	or, Western AK:	
Describe Reco	rded Data (s	Episaturation stream gauge, monitor	ing we	Endosatu II, aerial p	uration hotos, previous ins	spections)	, if availat	ole:		Mid Ma **Mineral S	ay – late July oils 12-24 inches	
										**Organic S	Soils 12-40 inches	
Remarks:									F d a	AC-Neutral Tes ominants > #FL dd non-domina	st = #OBL+FW J + UPL dominants; nts if tie	

Plot Number	ST039
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6175786055
Longitude (DD)	-149.569984421



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

### WETLAND DETERMINATION DATA FORM – Alaska Region

								Plot No: ST 040				
Project: SELDON RD PHASE 11 Da							ate: 6/10/22					
Applicant: ADOT+?	puni puni						In	Investigators: ZB+AL				
Borough/City/Locatio	n: M	AT- 91	u									
NAD 83, Decimal Degrees								STANTEC				
Latitude: 61,617	7101	N			Water	shed:	ISH C	REFRE				
Longitude: 149,569803w						on Note	S:					
Elevation (ft):					1							
								SUMMARY OF FINDINGS				
Are "Normal Circumsta	nces"	Presen	t?	YES		F	lydroph	ytic Vegetation Present?				
Significantly Disturbed?	)	VEG	SOILS	HYDRO				Hydric Soils Present?				
Naturally Problematic?		VEG	SOILS	S HYDRO			Wet	land Hydrology Present?				
Remarks:		120	OOILC									
Is the Sampled Area within a Wetland?												
VEGETATION         T< 1%, P = Present         SUBREGION:												
Tree Stratum DBH ≥ 3 inch		1/10	acre circu	lar plot unless no	oted, abso	lute cover r	ecorded	Dominance Test worksheet:				
Species	IND	DOM	Cover	Species	IND	DOM	Cover	Number of Dominant Species				
1. PICMAR	FW	4	B	3.								
2. BETNED	EU	V	7	4.				Total Number of Dominant				
Total Tree Cover: 17		50% of To	otal Cove	r: L	20% of	Total Cove	r: 2.4					
Sapling/Shrub Stratum	IND	DOM	Cover	8. VACON	JAF	N	)	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)				
1 Die mAR	TI	V	10	9			e					
2 ALLER VI Para	FW	V	1	10				Prevalence Index Worksheet				
2. ALNING	F	7	7	10.				Total % Cover of: Multiply by:				
3. SALPUL	FW	N	S	11.				OBI species O x1= 0				
4. (20SAC)	FU	Y	5	12.				18 34				
5. RHUGRO	F	Y	and and	13.				FACW species x 2 =				
6. VACVIT	F	N	3	14.	1 10 10 10			FAC species $6Lx3 = 80$				
7. EMPNIG	F	N	And the second s	15.				FACU speciesX 4 =56				
Total Shrub Cover: 35	!	50% of To	otal Cove	r: 17.5	20% of T	otal Cove	r: 7	UPL species $\bigcirc$ x 5 = $\bigcirc$				
Herbaceous Stratum	IND	DOM	Cover	13.				Column Totals: $94$ (A) $278$ (B)				
1. EQUARY	F	Y	15	14.								
2. CALCAN	F	Y	30	15.				Prevalence Index = $B/A = 2.96$				
3. CARRAN	EU	A.J	2	16.								
4 Duperula	54	N	T	17				Hydrophytic vegetation indicators:				
5	YW		1	18				Dominance Lest is >50%				
6				10.								
0.				19.				(Provide supporting data in				
1.				20.				Remarks or on a separate sheet)				
8.				21.		-		Problematic Hydrophytic Vegetation <sup>1</sup>				
9.				22.				must be present unless disturbed or problematic.				
10.				23.				Project Vegetation Type				
11.				24.				WMF				
12.				25.				Cowardin Code:				
Total Herb Cover: 47	5	50% of To	otal Cove	: 23.5	20% of T	otal Cove	r: 9.4	HCM Classification				
1.Open Water				2. Bare ground		1475		HGW Classification:				
Remarks: Bryophytes and L	ichens	may be li	sted in the	e Herbaceous co	olumns			Landform:				
								VETRESSIDN				
								Local Relief: CONCAVE				
								HIMMOCKY (MAS)				
							1					

### SOIL

1 19%

Plot No: ST 040

Profile Des	cription: D	escribe to the depth	needed	to docun	nent the presence/al	bsence c	of soil ind	dicators	Soil M	ap Unit Name	1	
	Horizon	Soil Matrix		-	Redox Featu	ires		CRYA	sucris	PERLESS	orin, 0-7%	
Depth (in.)	Name	Color (moist)	%	Type <sup>1</sup>	Color	%	Loc <sup>2</sup>	Mod <sup>3</sup>	Texture	Horizon Co	omments	
4-0	0e				···· ··· ··· ··· ··· ··· ··· ··· ··· ·							
8-1	Ba.	544/1	90	C	754124/4	10	PI		511			
1 1		0111		-	11511-17	10		-	0.0			
1-10	20	eran serie takat da post da anti-participa da anti-	10 Contraction of the					XEP	SA	-		
les vil	0	- 141.	Cam		- ZINUT.	1.2000	- 1		-1+ x			
6-19	Dg2	54 11	82	<u> </u>	7.2716-14	13	FL	-	SICC			
11	n Childenia					2	2					
		1/100									1.46	
<sup>1</sup> Type: C=Conc	entrations, D=I	Depletions, OX=Oxidiz	ed Roots	RM = Re	duced Matrix 4Locatio	on: PL=Po	re Lining	s. RC=Root	Channels, M	1=Matrix, CS=C	oated Sand Grains	
Remarks:	- 6		100			:	.	<sup>3</sup> Texture N	odifiers: Mu	cky (MK), Peaty	(PT), Permafrost (PF)	
							100	Coarse F	ragments: G	ravelly (GR), Co	obbly (CB), Stony (ST)	
ludric Soil l	adicators	Maggura from the t	n of the	minoral	ail laver event for	A1 A2 /	2 44	(15-35	%), 35-60% :	= Very (V), 60-9	0% = Extremely (X)	
Iyaric Soli I	ndicators	vieasure from the to	op of the	minerals	foil layer except for A	A1, A2, F	A3, A4				/	
<u>/V</u> Histosol c	or Histel (A1)	<u>A</u>	Thick E	Dark Surfa	ices (A12)				Hydric	Soils	YPS	
M Histic Epi	pedon (A2) <sup>4</sup>		Alaska	Gleyed (	A13)				Pres	ent?	107	
Black His	tic (A3)	1	Alaska	Redox (A	(14)				NRCS Dra	ainage Class:	VPD	
Hydrogen	Sulfide (A4)	<u></u>	Alaska	Gleyed F	ores (A15)	1.			Depth of C	Organic Soils:	4	
Indicators for	Problemati	c Hydric Soils <sup>5</sup> (Se	e Page	91/Sectio	n 4 for Problematic	Hydric S	oils Det	ails)	Restrictive	Layer Type:	NIA	
N Depleted	Below Dark	Surface (A11)	Alaska	Color Ch	ange (TA4) Give de	etails of a	color cha	ange Re	estrictive La	yer Depth:	NIA	
Depleted	Matrix (F3)	N	Alaska	Alpine S	vales (TA5)			4U	nderlain by	mineral soil v	v/chroma of ≤2	
N Redox Da	rk Surface (I	F6) N	Alaska	Redox w	th 2.5Y Hue						~	
	Dark Surface	(F7)	Alaska	Gleved w	/o Hue 5V or Redde	ar Lindari	ving	5N	lust have H	lydrophytic Ve	getation and	
A Deday De			AADe	Cicycu v			ying the	Pr	imary Hydr	ology, and an	appropriate	
No in	pression (Fo		AA Pos	sitive (min		rizon 4 in	icnes th	CK) pr	oblematic			
A Red Pare	nt Material (F	-21)	Pondeo	d/Flooded	/High Water Table (	12 inche	s or higi	ner)	\			
Very Sha	low Dark Su	rface (F22)	Low Or	rganic Ma	tter/Low Iron/High p	H Soil/N	ew Wetl	and <u>A</u>	Other (e)	plain in rema	rks)	
IYDROLOG	θY		1 martin									
		Wetland Hydr	ology In	dicators			Seco	ndary Indi	cators (2 or	more require	d)	
Primary Indica	tors (any one	e indicator is sufficie	ent)	:			Water-stained Leaves (B9)					
N Surface V	Vater (A1)		Inunda	ation Visib	le on Aerial Imagery	(B7)	△ Drainage Patterns (B10)					
High Wate	er Table (A2)	<u>/\</u>	Sparse	ely Vegeta	ated Concave Surfac	ce (B8)	Oxidized Rhizospheres along Living Roots (C3)(w/in 1					
Saturation	1 (A3) rke (B1)	1	Wari D	eposits (E	515) 2 Odar (C1) (w/in 11	2")	Presence of Reduced Iron (C4)					
N Sediment	Denosite (B)		Dry-Se		ter Table (C2)**	2)	N	Stunted or	aposits (C5) d or Stressed Plants (D1)			
N Drift Depo	sits (B3)		Other	(Explain i	Remarks)		Y	Geomorph	ic Position	(D2)		
N Algal Mat	or Crust (B4	)		1	( in territorial interview of the second sec		N	Shallow Ad	uitard (D3)	(w/in 24", not	te as restrictive lave	
N Iron Depo	sits (B5)	Ar	e Climat	tic/Hydrol	ogic Conditions on S	Site	1	Microtopog	raphic Rel	ief (D4)	·····,·	
N Surface S	oil Cracks (B	(6) Ty	pical for	this time	of Year? NO-DA	1) Clar	Y	FAC-Neut	al Test (D5	i)		
Field Observa	ations (inche	es from ground surfa	ace)	- 120		Wat	er Sour	ce:		Wetland Hy	drology Present	
Surface Water	Present?	Yes No	K	Depth (in	ches): NA	_				· · · · · · · · · · · · · · · · · · ·	VES	
Water Table P	resent?	Yes 🖄 No	<u> </u>	Depth (in	ches):9	_				Dry Seas	on Water Table	
Saturation Pre	sent?	Yes 🔀 No		Depth (in	ches):	_				SC, Interi	or, Western AK:	
(includes capil	iary tringe)	Episaturation		Endosat	uration 🖌				B	Mid M	av – late July	
Describe Reco	orded Data (s	stream gauge, moni	toring we	ell, aerial	photos, previous ins	pections	), if avai	able:		**Mineral S **Organic S	Soils 12-24 inches Soils 12-40 inches	
Remarks:									F	AC-Neutral Te	st = #OBL+FW	
									d	ominants > #Fl	U + UPL dominants;	
8		아파 소리는 것 같은 것 같아.			0.148 August 2010				a	dd non-domina	ints if tie	

Plot Number	ST040
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PEM1/SS4C
HGM	Slope
Latitude (DD)	61.6177086117
Longitude (DD)	-149.569779182



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST041
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6178468392
Longitude (DD)	-149.570437564



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST042
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6172420419
Longitude (DD)	-149.568434941



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST043
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/EM1C
HGM	Slope
Latitude (DD)	61.6170619295
Longitude (DD)	-149.56774882



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST044
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/1C
HGM	Slope
Latitude (DD)	61.6168419021
Longitude (DD)	-149.566976591



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST045
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6167500021
Longitude (DD)	-149.567142272



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation
Plot Number	ST046
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO1/EM1C
HGM	Slope
Latitude (DD)	61.6166661903
Longitude (DD)	-149.567408547



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST047
Wetland Status	RPW
Plot Type	SC
Plot Date	6/10/2022
NWI Classification	R3UBH
HGM	Riverine Channel
Latitude (DD)	61.6164863645
Longitude (DD)	-149.566683845



Photo Type: Hydrology

Direction: NA



Photo Type: Hydrology

Direction: NW



Photo Type: Hydrology

Direction: SE

Plot Number	ST048
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6166076566
Longitude (DD)	-149.566463187



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST049
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/1C
HGM	Slope
Latitude (DD)	61.616684268
Longitude (DD)	-149.566276628



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST050
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6165165022
Longitude (DD)	-149.565794211



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST051
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1C
HGM	Slope
Latitude (DD)	61.6164966169
Longitude (DD)	-149.565547488



Photo Type: Hydrology

Direction: NA



Photo Type: Vegetation

Direction: N



Photo Type: Vegetation

Plot Number	ST052
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.616483975
Longitude (DD)	-149.565213229



Photo Type: Soils

Direction: NA



Photo Type: Vegetation

Direction: E



Photo Type: Vegetation

Plot Number	ST053
Wetland Status	RPW
Plot Type	SC
Plot Date	6/10/2022
NWI Classification	R3UBH
HGM	Riverine Channel
Latitude (DD)	61.6164245759
Longitude (DD)	-149.565039364



Photo Type: Hydrology

Direction: N



Photo Type: Hydrology

Direction: NA



Photo Type: Hydrology