# APPENDIX C: 2022 WETLAND DELINEATION REPORT AND PERMIT REQUEST



# Wetlands and Waters Delineation Report

Marshall Airport and Access Road Improvements

November 14, 2022

# Prepared for:



Alaska Department of Transportation and Public Facilities

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Prepared by:

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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 improvements to the Marshall Airport and associated access road.

This 2022 report presents the findings of the baseline (current existing conditions) fieldwork for the 120-acre study area, covering the Marshall Airport and its access road. This includes the extent of vegetation cover and Wetlands and Waters within the study area. Wetlands and Waters include wetlands, streams, and ponds.

The Marshall Airport study area is located near Marshall, AK, which is approximately 75 miles north of Bethel on the lower Yukon River. The study area falls within the Nulato Hills-Southern Seward Peninsula Highlands and Yukon-Kuskokwim Coastal Plain Major Land Resource Areas. The streams found within the study area are tributaries of the Yukon River. The Yukon River is a traditional navigable water.

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).

## **Study Area Wetlands and Waters**

Status	Acres	Percent of Study Area
Wetlands	74.3	61.8
Waters	0.4	0.3
Total Wetlands and Waters	74.7	62.1
Uplands	45.5	37.9
Total	120.2	100.0

Wetlands were found in 61.8 percent of the study area. The majority of Wetlands and Waters are classified in the Cowardin system (Cowardin et al. 1979) as Deciduous Shrub (66.5 percent). Slope Hydrogeomorphic wetlands are the dominant Wetland and Waters classification for the study area (94.6 percent).

Ponds and Streams account for 0.3 percent of the study area. The total stream length for the study area is 420.9 feet.

# **Abbreviations**

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region, 2007 Supplement Version 2.0  ADEC Alaska Department of Environmental Conservation  AKEPIC Alaska Exotic Plants Information Clearinghouse  APT Antecedent Precipitation Tool  DOT&PF Alaska Department of Transportation & Public Facilities  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  NOAA National Oceanic and Atmospheric Administration  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  U.S. United States  USACE U.S. Corps of Engineers  USDA U.S. Department of Agriculture  USFWS U.S. Geological Survey  WB Waterbody  WD Wetland Determination  WETS Climate Analysis for Wetlands		
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	WB	Waterbody
WETS Climate Analysis for Wetlands	WD	Wetland Determination
	WETS	Climate Analysis for Wetlands

Introduction

# 1.0 INTRODUCTION

The Alaska Department of Transportation & Public Facilities (DOT&PF) is proposing to improve the Marshall Airport and associated access road. Baseline (current existing conditions) fieldwork for the airport and associated access road was conducted in 2022 to determine the extent of Wetlands and Waters.

The field data collected in September 2022 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 Consulting Services Inc. (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). All field data analysis was reported using the 2020 National Wetlands Plant List (USACE 2020a).

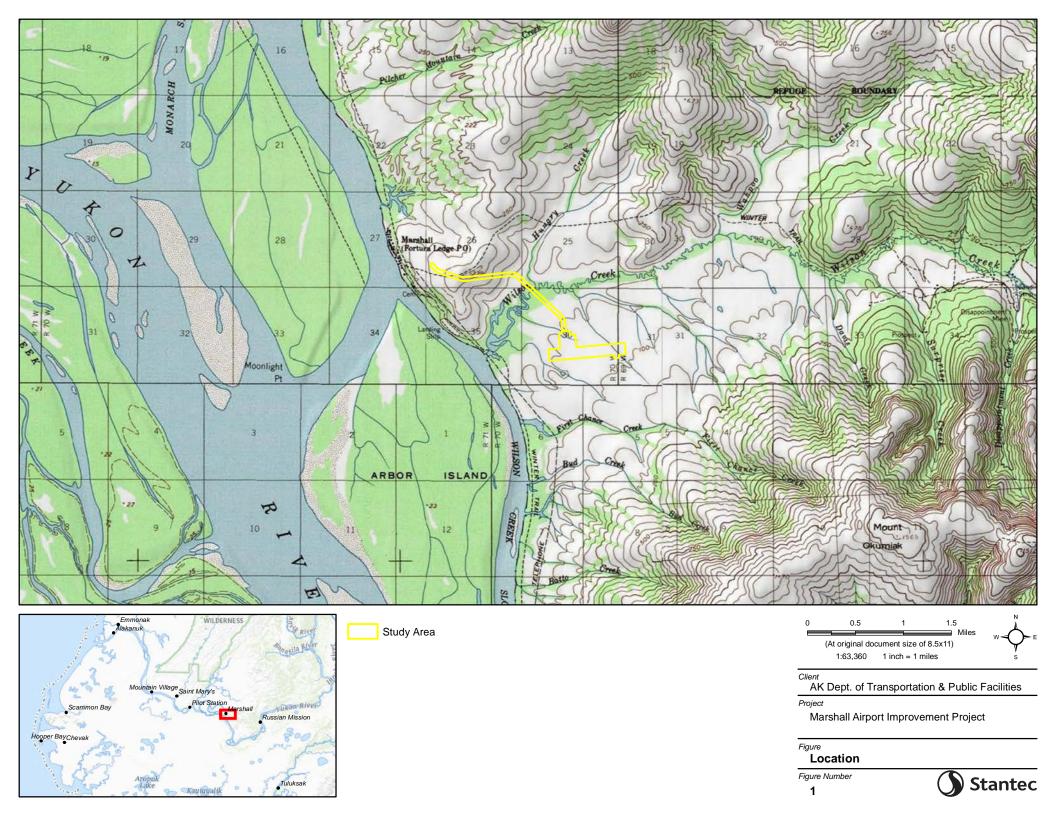
#### 1.1 STUDY AREA LOCATION

The 120-acre study area is located near the city of Marshall, approximately 75 miles north of Bethel on the lower Yukon River, and consists of the Marshall Airport, located east of the town, and the 1.75-mile access road to the airport (Figure 1).

The study area is within the Marshall D1 1:63,360 U.S. Geological Survey (USGS) quadrangle map. 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 with the central coordinate location.

**Table 1 Study Area Location** 

Meridian	Township Range Sections		Centroid Latitude (DD)	Centroid Longitude (DD)	
Coward	04N	69W	31	04.0705	162.0422
Seward	21N	70W	25, 26, 36	61.8735	-162.0433



**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: the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Department of Agriculture (USDA) ecoregion and soil survey information, USGS National Hydrography Dataset project watersheds and stream data, local climate data, and USFWS fish and wildlife data.

# 2.1.1 National Wetland Inventory

The NWI on-line Wetlands Mapper shows that 48.7 percent of the study area (58.6 acres) is covered by digital NWI data (USFWS 2022a). This section of the study area was mapped by NWI using 1980 Color Infrared imagery at a scale of 1:66,000.

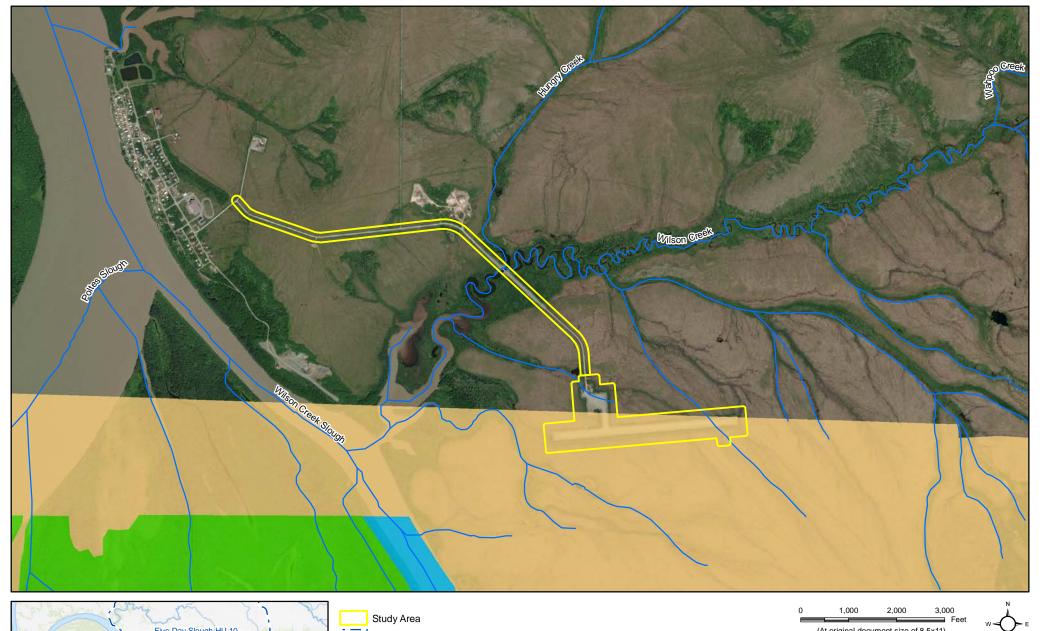
The entire section of the study area that was covered by the NWI was mapped as freshwater emergent wetland. The NWI mapped one small stream along the northern edge of the area it covered, covering less than 0.1 acres. The Marshall Airport was built after the NWI mapping was completed.

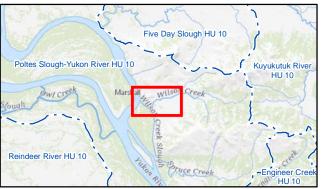
Table 2 summarizes the section of the study area that was mapped by the NWI. Figure 2 shows the NWI coverage of the study area.

**Table 2 National Wetland Inventory Mapping** 

NWI Group NWI Code		Acres	Percent Study Area			
Wetlands and Waters						
Freshwater Emergent	PEM1/SS1B	58.6	48.7			
Riverine R5UBH		<0.1	<0.1			
Tota	Wetlands and Waters	58.6	48.7			
No NWI Data						
NONE		61.6	51.3			
Total		120.2	100.0			

<sup>\*</sup>Apparent inconsistencies in sums are the results of rounding





HU 10 Watershed NHD Flowline

**NWI Mapping by Wetland Type** 

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Riverine (Stream/River)



1:24,000 1 inch = 2,000 feet

AK Dept. of Transportation & Public Facilities

Marshall Airport Improvement Project

Figure

NWI & NHD Mapping

Figure Number

2



**Existing Data and Methodology** 

# 2.1.2 Major Land Resource Areas

The majority of the study area, to include the airport and 1.15 miles of the access road (105.4 acres, 87.7 percent) is located within the 12-million-acre Interior Nulato Hills-Southern Seward Peninsula Highlands MLRA (MLRA; USDA 2006). This MLRA includes low mountains, rolling hills, and broad valleys. The MLRA is drained by Norton Sound and the Bering Sea. The MLRA is within a zone of discontinuous permafrost, with short cool summers and long cold winters.

The study area within the MLRA supports low and tall willow scrub, alder shrub and low ericaceous shrub scrub on well drained soils at low and middle elevations. Wet tussock-forming sedge meadows are also characteristic of the MLRA (USDA 2022).

The first 0.6 miles of the roadway is within the Yukon-Kuskokwim Coastal Plain MLRA, covering the remaining 14.8 acres within (12.3 percent) the study area. The study area is within the northern edge of the MLRA, which is characterized by a broad delta along the Yukon River. The dominant vegetation within the MLRA includes wet sedge meadows, sedge-shrub meadows, and sedge-moss meadows surrounding the various types of surface water found throughout the MLRA.

Low uplands within the MLRA support dwarf scrub, ericaceous shrubs, tussock-forming sedges, other hydrophytic plants and mosses (USDA 2022).

#### 2.1.3 Watersheds

The study area crosses one USGS hydrologic unit code (HUC) 10 watershed: the Poltes Slough-Yukon River HUC Watershed (1909030423). Waters from this watershed ultimately flow to the Yukon River. The study area watershed is shown in Figure 2.

#### 2.1.4 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 2022a). 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).

**Existing Data and Methodology** 

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). All streams flowing through the study area flow into the Yukon River; designated as TNW.

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:

Relatively Permanent Non-Navigable Tributaries of Traditional Navigable Waters (Perennial RPW): 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 year-round or do not have continuous flow at least seasonally.

National Hydrography Dataset

The USGS National Hydrography Dataset (NHD; USGS 2022) catalogs two named and two unnamed perennial streams running through the study area. Hungry Creek flows into Wilson Creek north of the bridge crossing on the access road, and Wilson Creek continues to flow south through the study area. Two unnamed streams are mapped crossing through the airport within the study area. Both flow into Wilson Creek, which is a tributary to the Yukon River (Figure 2).

#### 2.1.5 Soil Survey

One published National Cooperative Soil Survey report covers the project study area; The Digital General Soil Map of the United States (STATSGO2) (Soil Survey Staff 2022). The STATSGO2 survey provides general level soils information for those areas of Alaska lacking a more detailed soil survey that is shown at a scale of 1:1,000,000 (1 inch = 16 miles) in Alaska.

Soil map units from this level of survey detail are named for broad ecological regions and landforms. Each map unit is an association of soils, with varying components that may or may not have the potential for hydric soil inclusions (Soil Survey Staff 2022).

Existing Data and Methodology

The study area is within one soil map unit. Table 3 lists the map unit and the estimated percent hydric components. Soil map units are shown in Figure 3.

# Table 3 Soil Survey

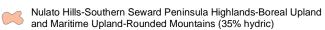
Map Unit Name	Map Unit	Acres	Percent of Study Area	Percent Hydric Components
Nulato Hills-Southern Seward Peninsula Highlands- Maritime Upland-Rounded Mountains	E40LM1	120.2	100.0	23
	Total	120.2	100.0	





Study Area

#### Map Unit (percent hydric components)



Nulato Hills-Southern Seward Peninsula Highlands-Maritime Upland-Rounded Mountains (23% hydric components)

Yukon-Kuskokwim Coastal Plain-Boreal Lowland-Flood Plains and Terraces (65% hydric components)



1:24,000 1 inch = 2,000 feet

Client

AK Dept. of Transportation & Public Facilities

Proiect

Marshall Airport Improvement Project

Figure

## Soils Mapping

Figure Number

3



**Existing Data and Methodology** 

#### 2.1.6 Climate Data

The growing season for this area begins on May 23 and ends on October 3 (USACE 2007).

Precipitation data, using the Climate Analysis for Wetlands (WETS) tool, leading to 2022 field work is listed in Table 4. The weather conditions preceding the field investigations were considered during onsite determinations. Normal precipitation is based on 1991-2020 records for Bethel Airport, Alaska (NOAA 2022). Conditions are determined to be normal if they fall within the 30 percent brackets shown in Table 4.

Field work was conducted September 11, 12, 14, and 18, 2022. September 2022 precipitation was 194 percent of average for the month. Precipitation for the water year, starting October 2021 was 122 percent of normal.

Field work coincided with an extreme storm in Western Alaska. In the week preceding field work, Bethel received 2.00 inches of rain, and over the period field work was conducted, Bethel received 1.92 inches of rain. These data suggest that conditions during field work were much wetter than normal.

Table 4 2022 Water Year WETS Precipitation for Bethel Airport, Alaska

	th Total Monthly Accumulated Precipitation (Inches)	Average Monthly	Percent of	30% Chance Precipitation		
Month		Accumulated Precipitation 1991-2020 (Inches)	Average Precipitation	Less Than (In.)	More Than (In.)	
October 2021	2.34	1.84	127	1.11	2.23	
November 2021	0.16	1.80	9	1.01	2.18	
December 2021	3.92	1.06	370	0.69	1.27	
January 2022	0.76	0.77	99	0.36	0.94	
February 2022	1.90	0.88	216	0.44	1.07	
March 2022	0.83	0.74	112	0.38	0.90	
April 2022	0.16	0.79	20	0.35	0.90	
May 2022	0.36	1.21	30	0.70	1.47	
June 2022	0.33	1.77	19	1.29	2.08	
July 2022	3.27	2.57	127	1.90	3.01	
August 2022	M4.57	3.36	136	2.61	3.89	
September 2022	5.61	2.89	194	2.00	3.43	
Total	24.21	1.64	122	-	-	

M = Month includes days with missing data

The Antecedent Precipitation Tool (APT, EPA 2022b) was also attempted to be run for the study area. An error of "No suitable primary station locations were found by the APT" was returned.

**Existing Data and Methodology** 

# 2.1.7 Sensitive and Rare Species

Wood Bison (*Bison bison athabascae*) is the only threatened species listed within the study area (USFWS 2022b). Threatened species are defined as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Wood bison were reintroduced to Alaska under section 10(j) of the Endangered Species Act and are classified as a non-essential experimental population.

#### 2.1.8 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. There is currently no recorded AKEPIC data within or around the study area (AKEPIC 2022).

## 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 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 four 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.
- 2. 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 a seasonal or perennial Relatively Permanent Waters (USACE 2010) and additional stream data were collected.
- 4. Waterbody (WB) Points. Photographs and GPS locations were taken when ponds were encountered.

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

#### Existing Data and Methodology

- 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;
- soil characteristics;
- visible or readily apparent hydrologic characteristics;
- physical characteristics including aspect, elevation, landform, and topography;
- location information including latitude and longitude (in NAD83 2011, decimal degrees);
- wetland descriptors including HGM and Cowardin classifications;
- and indications of prior disturbance and whether current conditions represent the 'new normal'.

#### Plant Data

Alaska plant indicator statuses follow the Alaska 2020 NWPL (USACE 2020a). Plant 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 66 sites throughout the study area, but primarily focused on areas where both NWI and NHD mapping (Sections 2.1.1 and 2.1.4, Figure 2), or landscape position showed potential for wetlands and waters. Field site locations were determined using aerial photographs and GPS. 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 11, 12, 14, and 18, 2022, by HDR Inc. Professional Wetland Scientist Zach Halstead. The plots collected are shown in Table 5. Field forms and photos for all WD plots, and photos of FVP, SC, and WB plots are presented in Appendix C.

**Table 5 Field Plots** 

Field Plot Type	Wetlands and Waters	Uplands	Total Plots
Wetland Determination (WD)	16	9	25
Field Verification Point (FVP)	20	19	39
Stream Crossing (SC)	2	0	2
Waterbody (WB)	0	0	0
Total	38	28	66

# 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 WorldView-2 satellite on July 12, 2021, that maintains a resolution of 0.5-meters in ESRI's ArcMap GIS (10.8) environment.

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. Water features were delineated at a scale of 1:400 (one-inch equals 33 feet), while delineation of vegetation boundaries occurred at a scale of 1:1,200 (one inch equals 100 feet).

Results

# 3.0 RESULTS

## 3.1 WETLANDS AND WATERS

The field verified wetland and waters totals are shown in Table 6. 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 6 Wetlands and Waters** 

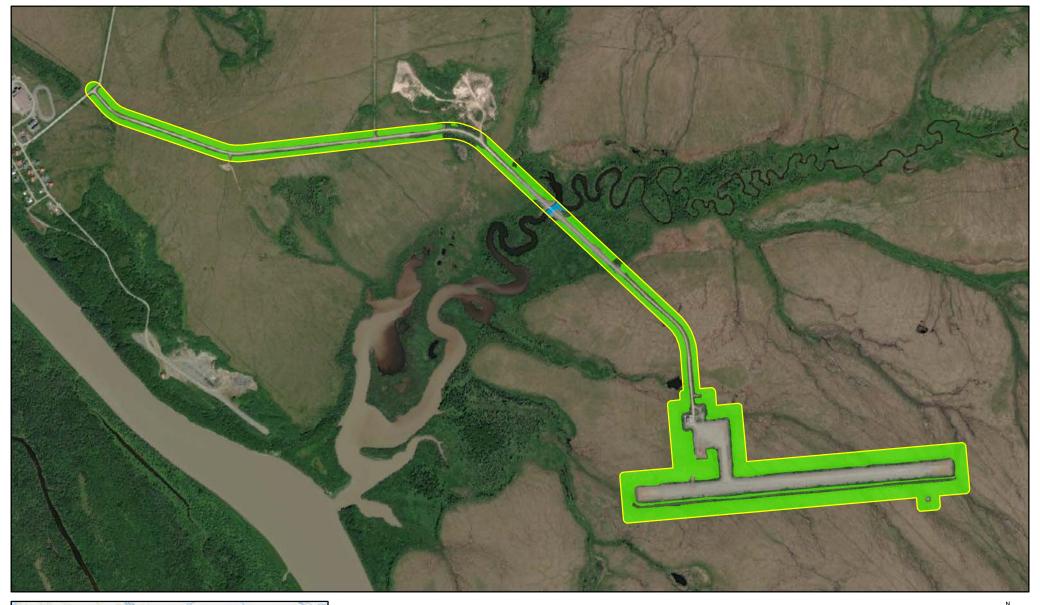
Status	Acres	Percent of Study Area
Wetlands	74.3	61.8
Waters	0.4	0.3
Total Wetlands and Waters	74.7	62.1
Uplands	45.5	37.9
Total	120.2	100.0

Extensive tussock tundra and low shrub wetlands were found throughout the gentle hillsides around Marshall and the study area, while tall willows and alder wetlands were within the floodplains of the Wilson and Hungry Creeks.

Within the area that was covered by NWI data, which covered only 48.7 percent of the total study area, the NWI mapped the entire area as wetland. However, the mapping occurred prior to the airport construction, and the current fill footprint is upland.

Two of the four streams mapped by the NHD were confirmed within the study area; Hungry Creek flows into Wilson Creek just north of the bridge on the access road and Wilson Creek continues to flow south through the study area.

Most of the uplands that were found around the road and airport were created during construction; natural uplands within the study area occur around river valley terraces and the material site.







Wetland

1,000 (At original document size of 8.5x11)

1:14,000 1 inch = 1,166.67 feet

Client
AK Dept. of Transportation & Public Facilities

Project

Marshall Airport Improvement Project

Figure

Wetlands and Waters Overview

Figure Number



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).

The study area was classified as 61.8 percent wetlands and 0.3 percent waters. Deciduous Shrub covers 66.5 percent of the wetlands and waters that were found in the area. Evergreen Scrub and Herbaceous wetlands cover 23.0 and 9.8 percent of wetlands and waters, respectively. Ponds and streams make up the remaining 0.6 percent of wetlands and waters found within the study area.

Wetlands and Waters polygons are labeled by Cowardin Classification on the Wetlands and Waters Detail figures presented in Appendix D. All classifications are shown in Table 7.

**Table 7 Cowardin Classifications** 

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters	
Wetlands					
	PSS1	1.0	0.8	1.3	
Deciduous Shrub	PSS1/EM1	47.5	39.5	63.6	
	PSS1/3B	1.2	1.0	1.6	
To	Total Deciduous Shrub 49.7 41.3 66				
Evergroop Corub	PSS3/EM1	16.5	13.7	22.1	
Evergreen Scrub	PSS3/1	0.7	0.6	0.9	
	Total	17.2	14.3	23.0	
Herbaceous	PEM1	7.3	6.1	9.8	
	Total Herbaceous	7.3	6.1	9.8	
	Total Wetlands	74.3	61.8	99.5	
Waters					
Pond	PUB	<0.1	<0.1	<0.1	
Tota	l Pond	<0.1	<0.1	<0.1	
Stream	R3UB	0.4	0.3	0.5	
	Total Stream	0.4	0.3	0.5	
	Total Waters	0.4	0.3	0.5	
Total '	Wetlands and Waters	74.7	62.1	100.0	
	Total Uplands	45.5	37.9		
	Total Study Area*	120.2	100.0		

<sup>\*</sup>Apparent inconsistencies in sums are the results of rounding.

Results

# 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 to 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 8 provides a summary of the acres of each HGM type as currently classified within the study area.

**Table 8 Hydrogeomorphic Classification** 

HGM Classification	Acres	Percent of Study Area
Wetlands		
Depressional	0.7	0.6
Riverine	2.9	2.4
Slope	70.7	58.8
Total Wetlands	74.3	61.8
Waters		
Depressional	<0.1	<0.1
Riverine Channel	0.4	0.3
Total Waters	0.4	0.3
Total Wetlands and Waters	74.7	62.1
Total Uplands	45.5	37.9
Total Study Area	120.2	100.0

<sup>\*</sup>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 ADEC Technical Report WRP-DE-1999 (ADEC 1999), an application of the HGM approach for precipitation driven wetlands on discontinuous permafrost in Interior Alaska.

Results

#### **Riverine Wetlands**

Riverine 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 (ADEC 1999).

Riverine wetlands in the study area occur within the floodplains of Wilson Creek and Hungry Creek (Photo 1).

Photo 1: Riverine HGM Wet Herbaceous Wetland



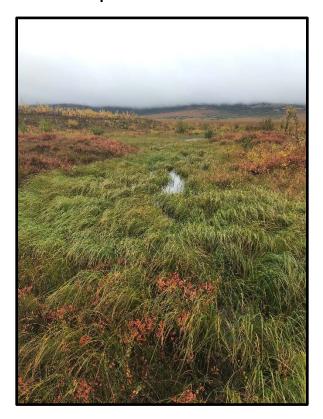
Results

#### Slope Wetlands

Slope 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 (ADEC 1999). 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.

Slope wetlands account for the majority of wetlands found within the study area, receiving groundwater output from the hills to the north (Photo 2).

**Photo 2: Slope HGM Wetland** 



Results

#### Depressional Wetlands and Waters

Depressional wetlands occur in topographic depressions on a variety of geomorphic surfaces. Dominant water sources are precipitation, groundwater discharge, and surface flow and interflow from adjacent uplands. The direction of flow is normally from surrounding non-wetland areas toward the center of the depression. Elevation contours are closed, allowing for the accumulation of surface water. Depressional wetlands may have any combination of inlets and outlets or lack them completely. Dominant hydrodynamics are vertical fluctuations, primarily on a seasonal basis. Depressional wetlands lose water through intermittent or perennial flow from an outlet, evapotranspiration, or contribution of groundwater (ADEC 1999).

Four depressional features occur in the study area. One depressional wetland surrounds a depressional pond along the western edge of the airport entrance. The remaining three depressional wetlands occur in small concavities adjacent to the airport where water is able to pond.

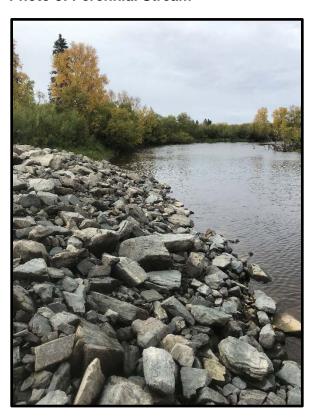
#### **Riverine Channel Waters**

Streams and rivers classified as RPW are classified as Riverine Channel in the project HGM system. This class includes the stream bed below ordinary high water, bare sands and gravels in seasonal streams, gravel bars in larger stream systems, and partially vegetated islands that are seasonally flooded.

The two perennial streams that flow through the study area are considered Riverine Channel HGM. Wilson Creek, a Perennial RPW is shown in Photo 3.

Results

**Photo 3: Perennial Stream** 



# 3.1.3 Streams

The NHD mapped four perennial streams within the study area. Hungry Creek and Wilson Creek were confirmed near the bridge along the access road. Hungry Creek flows into Wilson Creek just north of the bridge; Wilson Creek continues to flow south under the bridge to the Yukon River, a TNW.

The additional two unnamed perennial streams mapped by the NHD may have been filled in during airport construction and both appear to exist outside of the study area. Table 9 lists the streams that were found within the study area.

**Table 9 Streams** 

Stream Name	Stream Description	Cowardin Classification	Length (linear feet)
Wilson Creek	Perennial Stream	R3UBH	229.5
Hungry Creek, Segment 1	Perennial Stream	R3UBH	137.2
Hungry Creek, Segment 2	Perennial Stream	R3UBH	54.1
		Total	420.9

<sup>\*</sup>Apparent inconsistencies in sums are the results of rounding.

Results

#### 3.1.4 Jurisdictional Status of Wetlands and Waters

For projects that run along road corridors, it is sometime difficult to determine connectivity of Wetlands and Waters to RPWs that ultimately flow to TNWs. Continuous tussock tundra wetlands are found throughout the study area and are drained by Hungry and Wilson Creek and other streams outside the study area boundaries which provide connectivity to the Yukon River.

As seen in Figure 4 and the detailed Figures in Appendix D, the wetlands within the study area have abutting or adjacent connection to the main channel of Hungry and Wilson Creeks, both RPWs, which flow to the Yukon River, a TNW. Figure 2 shows the NHD perennial streams that flow through or are downstream of the study area. The field work verified these streams were perennial RPWs and continue as perennial RPWs to the Yukon River.

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

# 3.2 **VEGETATION**

# 3.2.1 Project Vegetation Types

The project vegetation types are listed in Table 10 and shown in Appendix E. The plant community descriptions provided in the Alaska Vegetation Classification System (Viereck et al. 1992) formed the basis for the Project Vegetation Types.

Shrubs are the dominant vegetation type found within the study area (69.6 percent); 80.0 percent of which were found in wetlands. Open Mixed Shrub Sedge Tundra (OMSST) was the most abundant Shrub vegetation type found; one hundred percent was wetland. Herbaceous and Mixed Forest vegetation types covered 7.4 and 0.6 percent of the study area, respectively. Open Water (OW) made up 0.3 percent of the study area, and 22.1 percent of the area was Barren.

**Table 10 Vegetation Classification** 

Vegetation Group	Vegetation Type	Vegetation Code	Wetlands and Waters Acres	Total Acres	Percent Wetlands and Waters	Percent Study Area
Mixed	Open Mixed Forest	OMF	-	0.7	-	0.6
Forest	Total	Mixed Forest	-	0.7	-	0.6
	Closed Tall Alder Willow Shrub	CTAWS	-	0.9	-	0.7
	Closed Tall Willow Shrub	CTWS	-	0.1	-	0.1
Shrub	Deciduous Shrub and Sapling Regrowth	DSSR	-	8.6	-	7.2
Siliub	Dwarf Shrub Tundra	DST	0.7	0.7	100.0	0.6
	Open Low Willow Shrub	OLWS	1.0	7.0	14.3	5.8
	Open Mixed Shrub Sedge Tundra	OMSST	59.9	59.9	100.0	49.8

Results

Vegetation Group	Vegetation Type	Vegetation Code	Wetlands and Waters Acres	Total Acres	Percent Wetlands and Waters	Percent Study Area
	Open Tall Alder Willow Shrub	OTAWS	•	0.7	-	0.6
	Open Tall Willow Shrub	OTWS	2.9	3.3	86.7	2.8
	Shrub Birch Willow	SBW	2.4	2.4	100.0	2.0
		Total Shrub	66.9	83.6	80.0	69.6
	Mesic Herbaceous	МН	0.1	1.7	3.2	1.4
Herbaceou s	Wet Herbaceous	WH	7.3	7.3	100.0	6.1
	Total	Herbaceous	7.3	8.9	82.0	7.4
Land Cayor	Barren	BARE	-	26.5	-	22.1
Land Cover	Total Land Cover		-	26.5	-	22.1
Motor	Open Water	OW	0.4	0.4	100.0	0.3
Water	Total Water Cover		0.4	0.4	100.0	0.3
		Total	74.7	120.2	62.1	100.0

<sup>\*</sup>Apparent inconsistencies in sums are the results of rounding

# 3.2.2 Plant Species

Fifty-one vascular plant species were recorded at WD plots in or near the study area. No recorded species were threatened or endangered. No non-native species were recorded. The full list of plant species recorded in the field is presented in Appendix B.

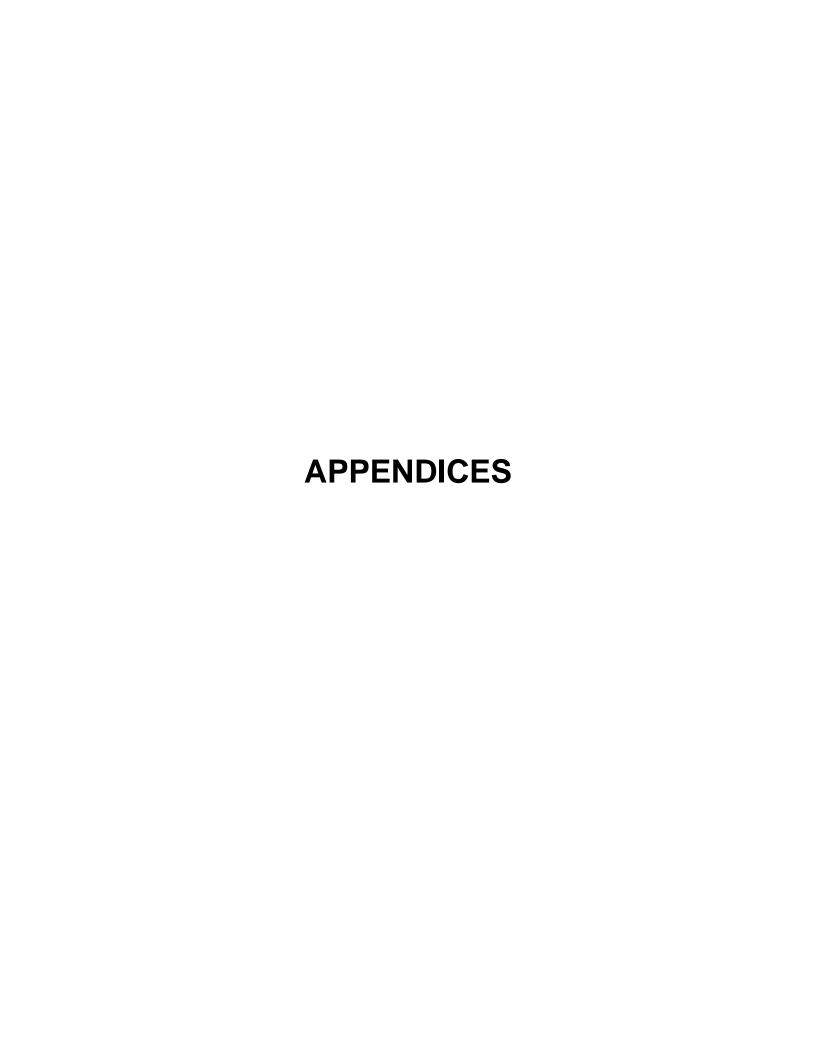
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Appendix A Plant List

# Appendix A PLANT LIST

Plants recorded in the study area during wetland 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)
- NL: Not listed in the National Wetland Plant List (Assigned a status of UPL)
- N/A: Not applicable (Applies to unkeyed plants listed by Genus or larger group)

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

#### **Trees**

Latin Name	Common Name	Indicator Status Rating
Betula papyrifera	Paper Birch	FACU
Picea glauca	White Spruce	FACU
Populus tremuloides	Quaking Aspen	FACU

Saplings/Shrubs

Latin Name	Common Name	Indicator Status Rating
Alnus incana	Speckled Alder	FAC
Alnus viridis	Sitka Alder	FAC
Andromeda polifolia	Bog-Rosemary	FACW
Betula glandulosa	Resin Birch	FAC
Betula nana	Swamp Birch	FAC
Betula papyrifera	Paper Birch	FACU
Empetrum nigrum	Black Crowberry	FAC
Picea glauca	White Spruce	FACU
Populus balsamifera	Balsam Poplar	FACU
Populus tremuloides	Quaking Aspen	FACU
Rhododendron tomentosum	Marsh Labrador-Tea	FACW
Ribes laxiflorum	Trailing Black Currant	FACU
Rosa acicularis	Prickly Rose	FACU
Salix alaxensis	Felt-Leaf Willow	FAC
Salix arbusculoides	Little-Tree Willow	FACW

# Appendix A Plant List

Latin Name	Common Name	Indicator Status Rating
Salix arctica	Arctic Willow	FACU
Salix barclayi	Barclay's Willow	FAC
Salix bebbiana	Gray Willow	FAC
Salix fuscescens	Alaska Bog Willow	FACW
Salix lasiandra	Pacific Willow	FACW
Salix myrtillifolia	Blueberry Willow	FACW
Salix pulchra	Diamond-Leaf Willow	FACW
Salix scouleriana	Scouler's Willow	FAC
Spiraea stevenii	Steven's Meadowsweet	FACU
Vaccinium oxycoccos	Small Cranberry	OBL
Vaccinium uliginosum	Alpine Blueberry	FAC
Vaccinium vitis-idaea	Northern Mountain-Cranberry	FAC
Viburnum edule	Squashberry	FACU

# Herbaceous

Latin Name	Common Name	Indicator Status Rating
Aconitum delphiniifolium	Larkspur-Leaf Monkshood	FAC
Calamagrostis canadensis	Bluejoint	FAC
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex bigelowii	Bigelow's Sedge	FAC
Chamaenerion angustifolium	Narrow-Leaf Fireweed	FACU
Comarum palustre	Purple Marshlocks	OBL
Cornus canadensis	Canadian Bunchberry	FACU
Deschampsia caespitosa	Tufted Hair Grass	FAC
Dryopteris expansa	Spreading Wood Fern	FACU
Equisetum arvense	Field Horsetail	FAC
Equisetum fluviatile	Water Horsetail	OBL
Eriophorum angustifolium	Tall Cotton-Grass	OBL
Eriophorum vaginatum	Tussock Cotton-Grass	FACW
Galium trifidum	Three-Petal Bedstraw	FACW
Juncus castaneus	Chestnut Rush	FACW
Luzula wahlenbergii	Wahlenberg's Wood-Rush	OBL
Petasites frigidus	Arctic Sweet-Colt's Foot	FACW
Polemonium acutiflorum	Tall-Jacob's-Ladder	FAC
Rhodiola integrifolia	Entire-Leaf Rosewort	FAC
Rubus arcticus	Northern Blackberry	FAC
Rubus chamaemorus	Cloudberry	FACW
Saussurea angustifolium	Narrow-Leaf Saw-Wort	FAC

Appendix A Plant List

Latin Name	Common Name	Indicator Status Rating
Spinulum annotinum	Interrupted Club-Moss	FACU

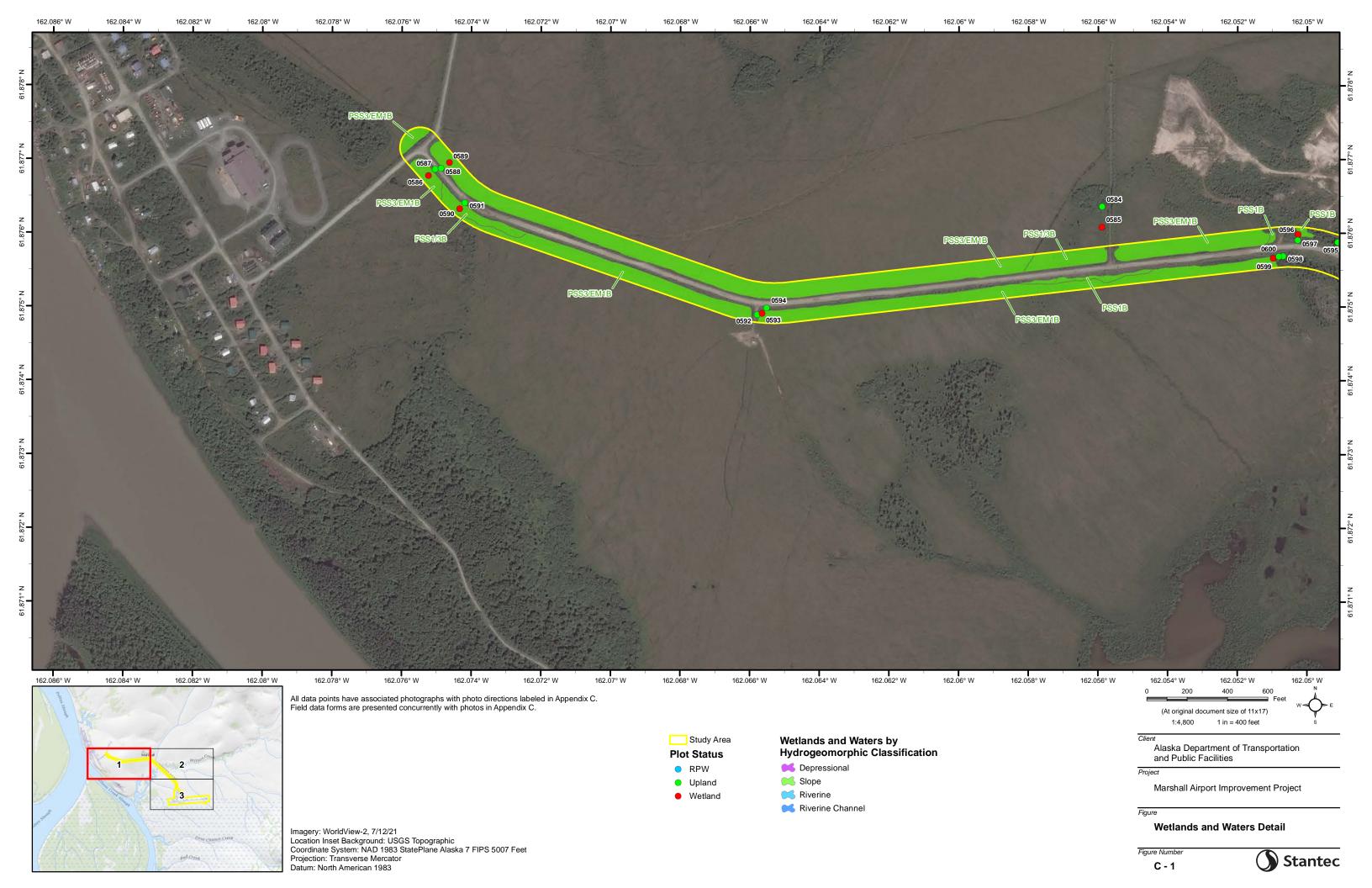
Appendix B Field Data Forms and Photos

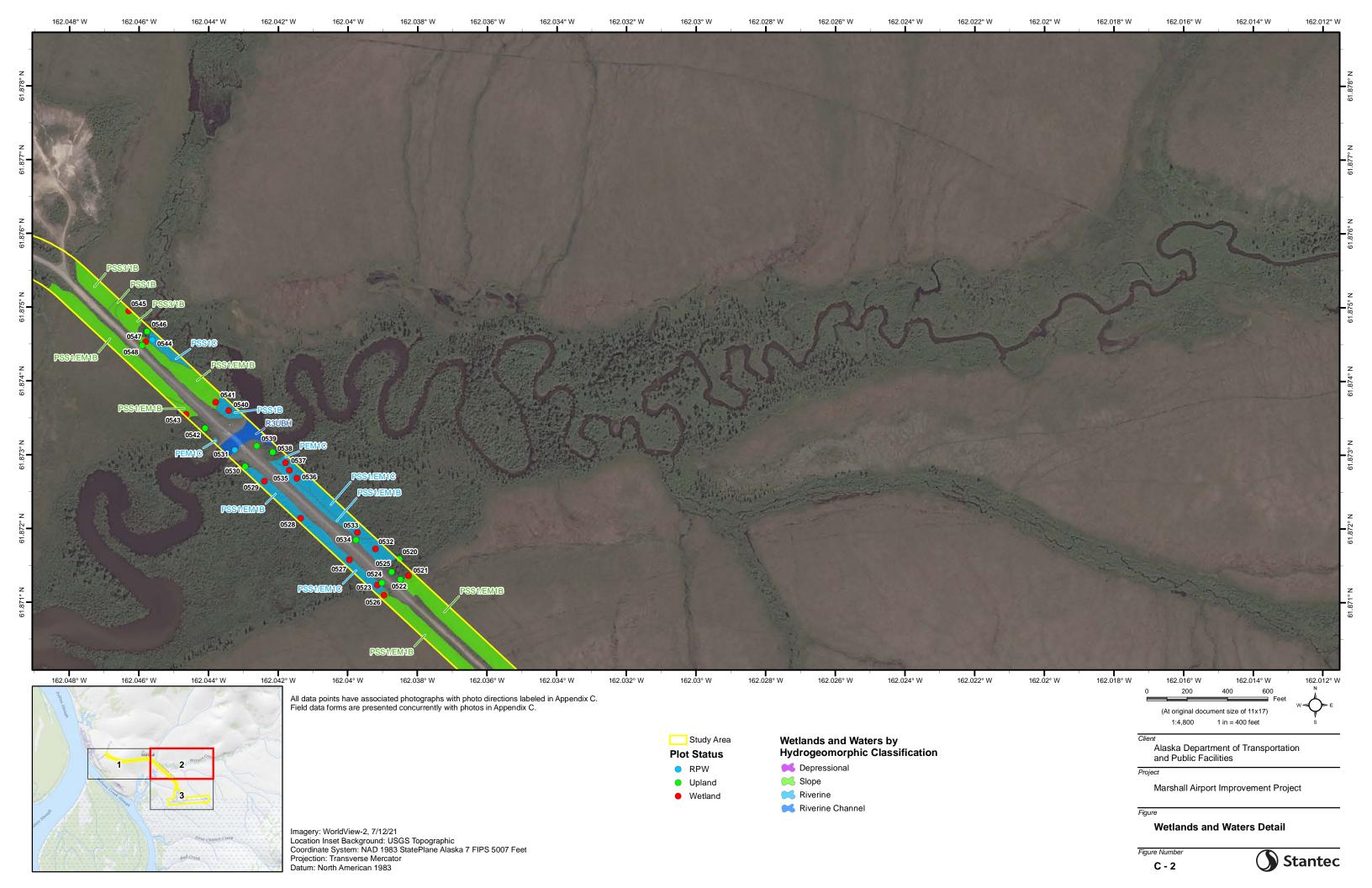
# Appendix B FIELD DATA FORMS AND PHOTOS

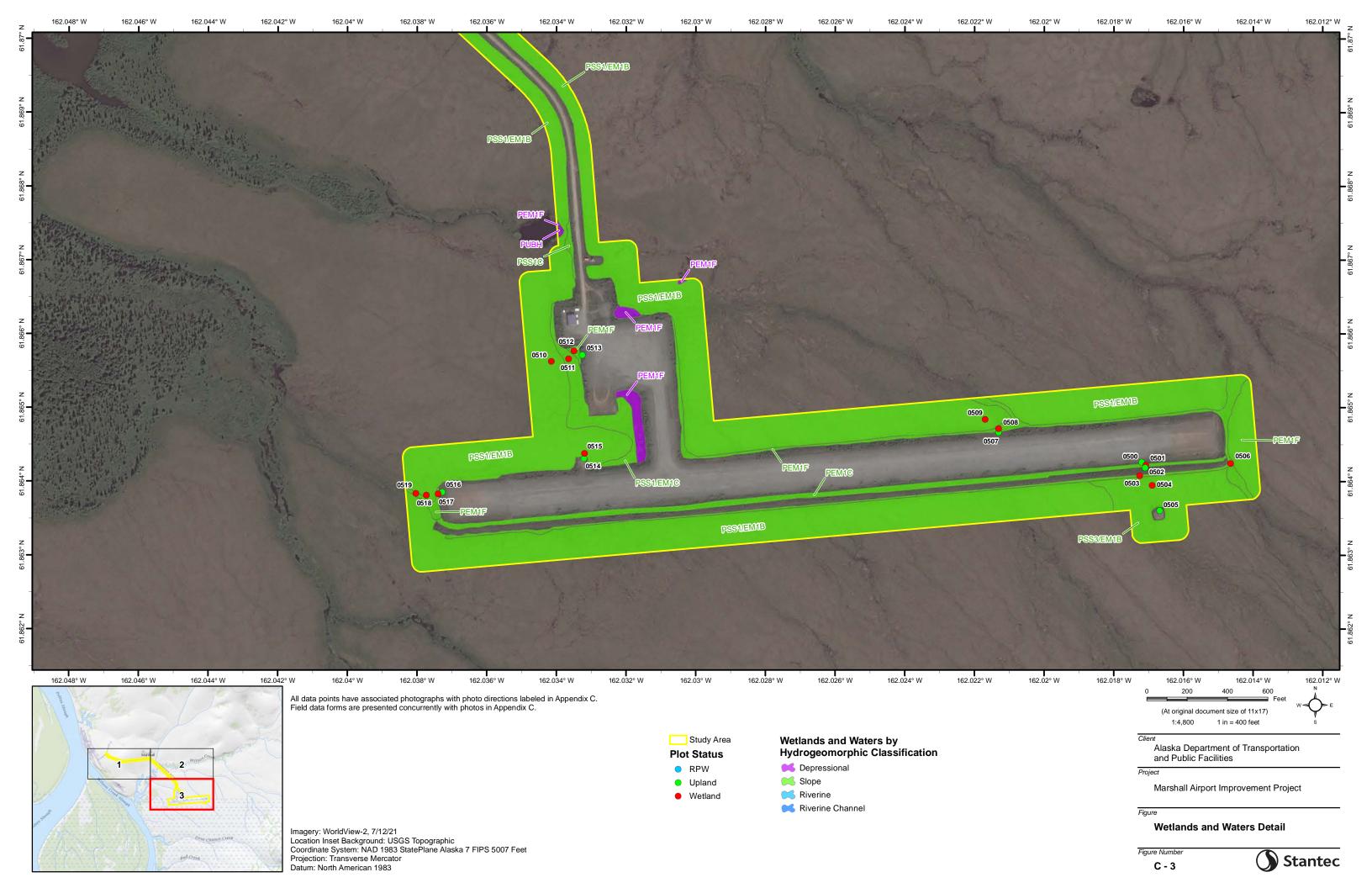
#### WETLANDS AND WATERS DELINEATION REPORT

Appendix C Wetlands and Waters Detail Figures

# Appendix C WETLANDS AND WATERS DETAIL FIGURES



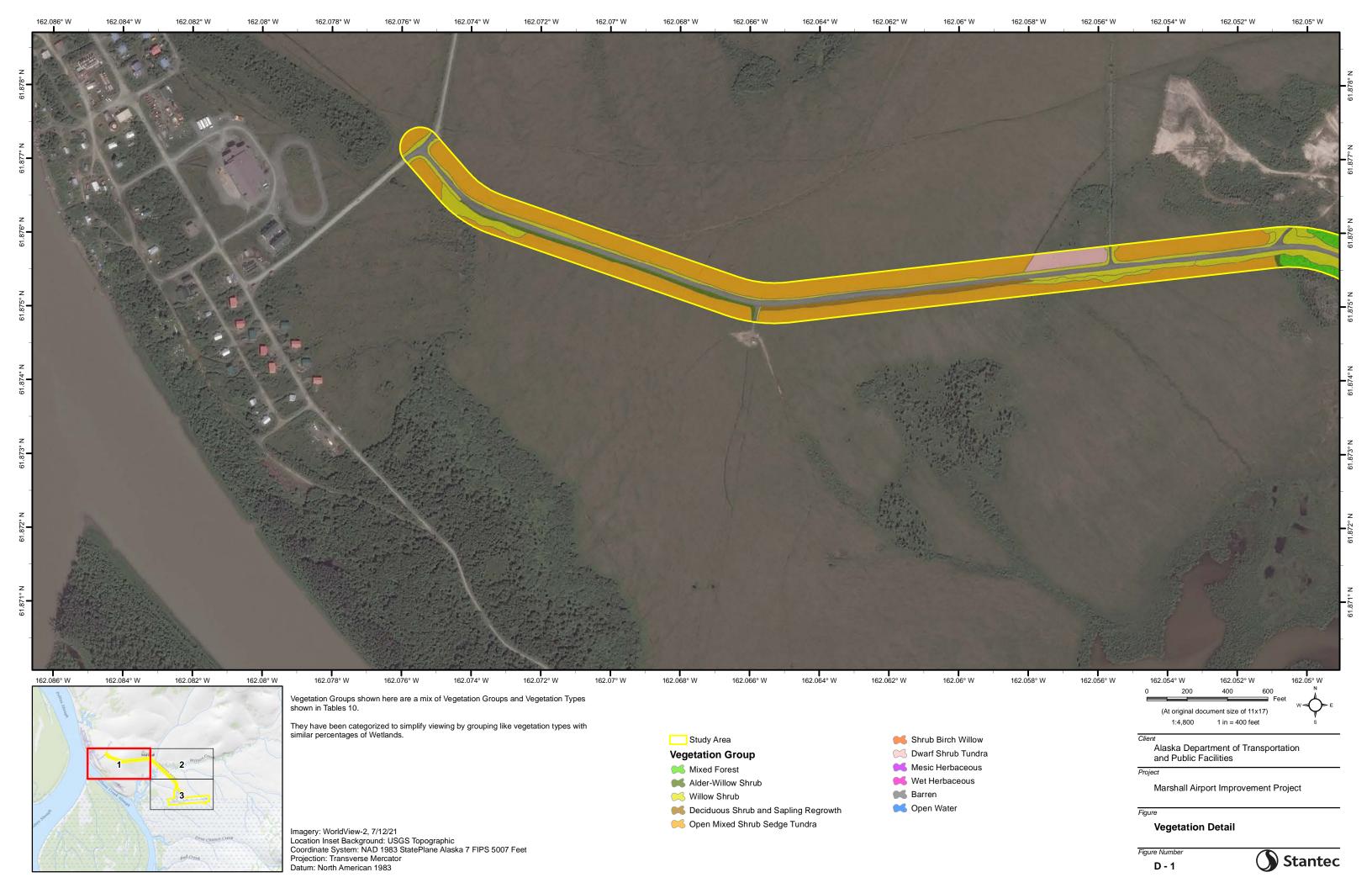


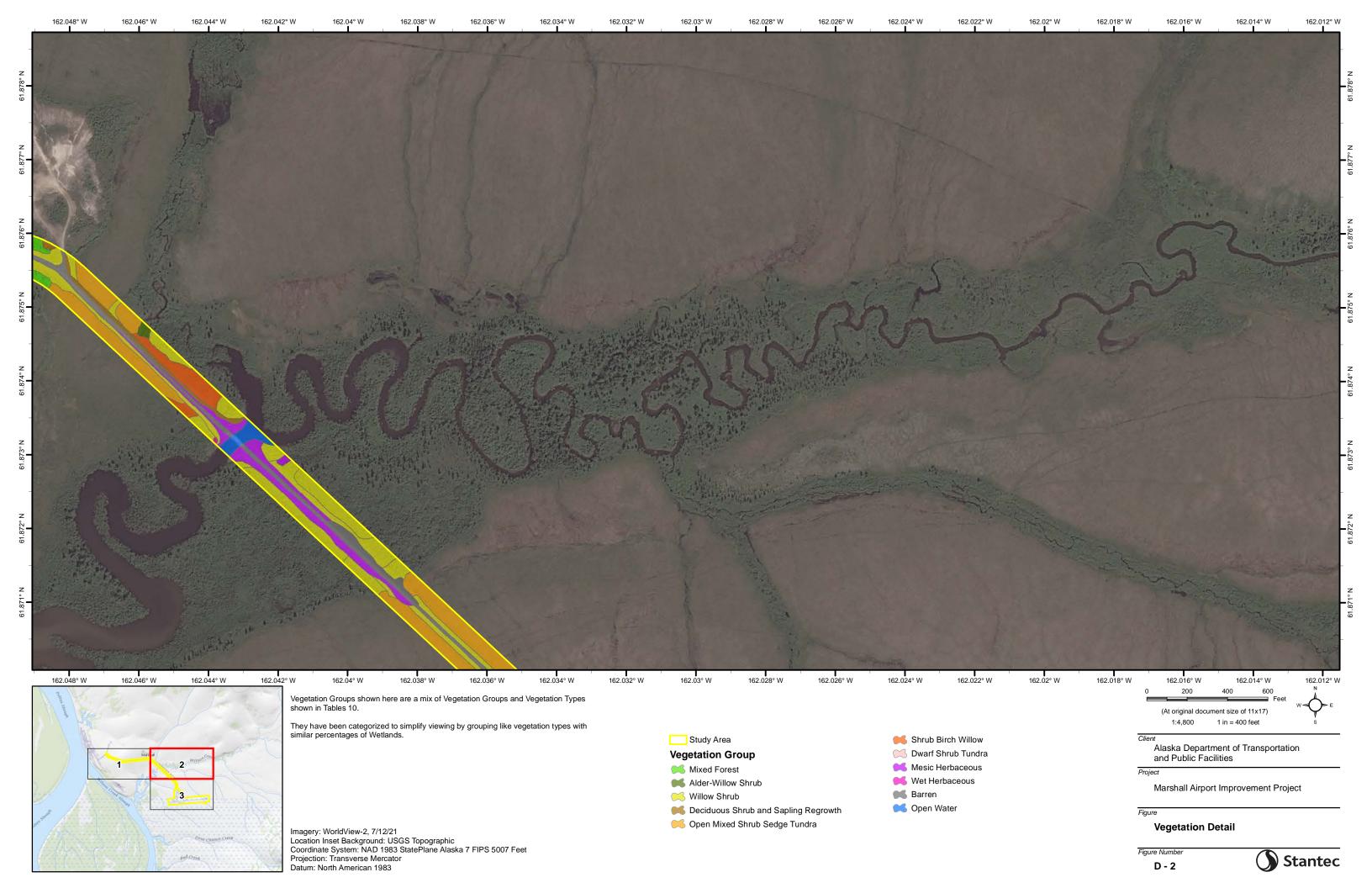


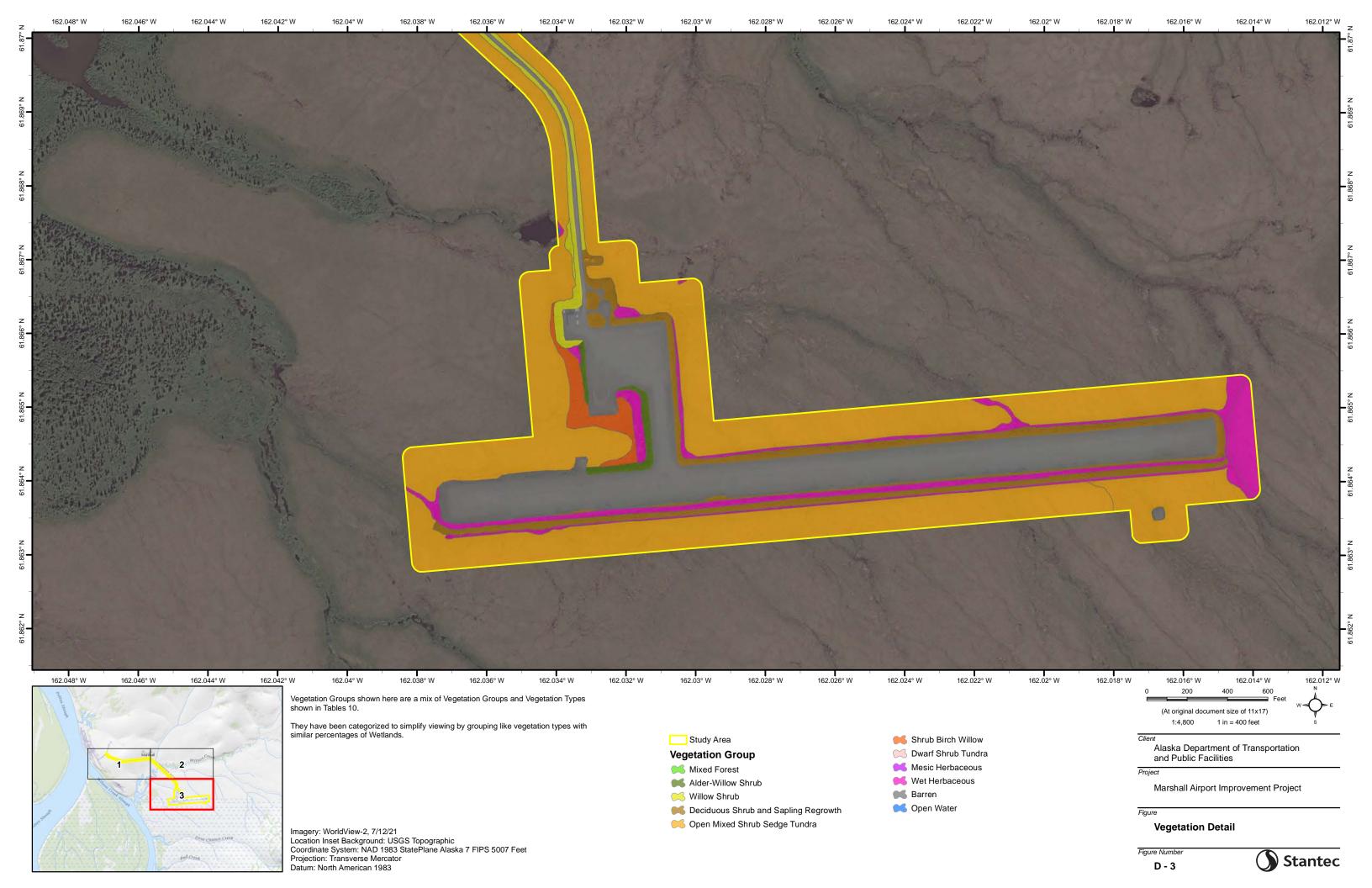
#### WETLANDS AND WATERS DELINEATION REPORT

Appendix D Vegetation Detail Figures

# Appendix D VEGETATION DETAIL FIGURES







#### WETLANDS AND WATERS DELINEATION REPORT



#### Wetlands and Waters Delineation Report

Appendix B, Data Forms and Photos

Marshall Airport and Access Road Improvements

November 14, 2022

#### Prepared for:



Alaska Department of Transportation and Public Facilities

2301 Peger Road Fairbanks, AK 99709

Prepared by:

Stantec Consulting Services Inc. 475 Riverstone Way, Unit 3 Fairbanks, AK 99709

WETLAND DETERMINATION DATA FORM	
Project: Marshall Aliport Borough/City: Kusili	k CA Date: 9/11/2022
Applicant/Owner: ADOT	Sampling Point #: 500
	n: HDR Alaska, Inc.
Lat. (dec. °) 61. 86 42 62 Long. 162. 017222 ± 'NAD 83 Recorde	d on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Lan	
Local relief: Shape across slope: (linear/convex/concave Shape up/downslope: linear	r/convex/concave NWI classification:
Photo nos./descriptions: NESW Soci / Z Camera#:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: _	
Are Vegetation N, Soil N, or Hydrology Significantly disturbed? Are "Normal C	f ·
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season?	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes No X Is the sampled within a wetlar	
Wetland Hydrology Present? Yes No X_	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). %	
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species 7
1. None 5 5	That are OBL, FACW, or FAC: (A)
26	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	
Total Tree Covers	Percent of Dominant Species 01
Total Tree Cover:	That are OBL, FACW, or FAC: 8 (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind	I DRI chacias
1. top. bal. 15 Y FACU 7. Vac. v.t. 3 FACU 8. Emp. nig. 1 FACU 8.	T FACIAL anguing
3. Sal. bar. 5 Y FAC 9. Bet. sla. 5 Y FAC	
4. Vac. Uli. 10 4 FAC 10. Alm. Sin. 3 FA	70
5. Rho, form, 5 Y FACW11.	UPL + NL species X5=
6. Bet, nan, 3 FAC 12.	- Column Totals: 88 (A) 271 (B)
Total Sapling/Shrub Cover: 55	
50% of total cover: 27.5 20% of total cover: //	Prevalence Index = B/A = 3.08
Herb Stratum	Tiovalence made = B/A =
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind	
1. Eggi arvi 10 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Cha, ang, 5 FACU 13.	- 1/
3. Des, cae, 10 Y FAC 14.	Dominance Test is >50%  Prevalence Index is ≤3.0
4. Eri. Vag. 3 FACW 15.	
5. Ped. sp. 1 - 16 16 16 17.	Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
6. Cc   Can ( 5   FAC 17.   18.	
8	Problematic Hydrophytic Vegetation (Explain)
9	
10 21	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 34	
50% of total cover: 17 20% of total cover: 6.8	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 5×5 % of bare ground: 5	Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes	Present?
(where applicable) Remarks:	
Remarks:	
Plot located = 5 vostone from toe of slone of sun	ray prism

SOIL	and the state of t	No. Trans	c des		Sampling Point #: 500		
Profile Description: (Describe to the depth needed	to document the indicator or c	onfirm the al	bsence of indicat	ors)			
Depth Horizon Soil Matrix	Redox Features	ONE DATE		a,a dip.			
(in.) (opt.) Color (moist) %	Color (moist) % Ty	pe <sup>1</sup> Loc		(pos/	Remarks		
0-1:0:				neg)	(or use comment number)		
1-2 0 010WR7h		72	GRLD				
2 22 6 10000 -				_	EII.		
2-EU C 104K814 100 -			GRW		_ F. []		
					- 100 Marie 1980		
			-		at the day of the		
			-	1 - 1	A Land Company of Company		
	A CONTRACT OF THE PERSON NAMED IN COLUMN TWO	1916	1400		The second second		
		- S		.,	1 Marine State		
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Redu	ced Matrix, CS=Coated Sand	Grains <sup>2</sup> Loc	cation: PL = Pore	Lining, RC	= Root Channel, M = Matrix		
Hydric Soil Indicators (check ones that apply, mea							
Standard Indicators:	Indicators for Problemat	and the state of t			2.5		
W Histosol or Histel (A1)	Depleted Below Dar	•	Δ.	Alaska C	olor Change <sup>4</sup> (TA4)		
Histic Epipedon (A2) (8-16" organics, salid,	0.1-		. 0	1			
underlain by mineral soil with chroma ≤2)	Depleted Matrix (F3)		10	_ Alaska A	lpine Swales (TA5)		
Black Histic (A3)	Nedox Dark Surface	(F6)	1	_ Alaska R	edox with 2.5Y Hue		
Hydrogen Sulfide (A4) (within 12"of mineral	N Depleted Dark Surfa	ce (F7)	A	AK Gleye	ed without Hue 5Y or		
surface; @" in this pit	1 1				er Underlying Layer		
Thick Dark Surface (A12)	Redox Depressions	(F8)	N	_ α,α-dipyr	idyl positive (see pg. 91)		
Alaska Gleyed (A13)	A Red Parent Material	(F21)	-N		w organic matter, low iron, high		
N Alaska Redox (A14)	Very Shallow Dark S	urface (F22)			ently developed., see p.91 of ment; explain in Remarks)		
Alaska Gleyed Pores (A15)	<sup>3</sup> One indicator of hydrophy						
Alaska Gloyeu Foles (A15)	appropriate landscape pos	sition must b	e present unless	disturbedo	r problematic.		
	Give details of color chan	ge in Remar	ks.		/		
Restrictive Layer (if present)	Drainage Class: \						
Type: None	Soil Map Unit Name:		Hydric Soil Pres	ent?	Yes No X		
Depth (inches): V)A							
Comments:			151				
1.							
2. 1/2 /2 /2 /2 / 1 / 1 / 2 /	oserved : Fill						
3. 100 my and soil inditutors of	served , 111		7 7/5/	100			
HYDROLOGY							
Wetland Hydrology Indicators (check ones that app	ly, measure from soil surfac		econdary Indicate		CONTRACTOR OF THE PARTY OF THE		
Primary Indicators (any one indicator is sufficient)		1	∠ Water-Stained	Leaves (B	9)		
Surface Water (A1) N Surface	e Soil Cracks (B6)	A	/ Drainage Patte	ems (B10)			
High Water Table (A2) (w/in 12")	ation Visible on Aerial Imagery	(B7) A	Oxid'd Rhizospheres on Living Roots (C3) (within 12")				
N Sparse Sparse	ely Vegetated Concave Surface	ce (BB)	A Dragonos of Bodyand Iron (C4)				
Al		Δ.	(pos. α,α or so		ge w/in 12")		
1 1	eposits (B15)	N	Salt Deposits (				
	gen Sulfide Odor (C1)	70	Stunted or Str				
Drift Deposits (B3)	eason Water Table (C2) (w/in 1 il, 12"-40" organic)	12"-24"	/ Geomorphic P				
N 41 114 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(explain)	A	∠ Shallow Aquita		- 40"		
A) manual	(explain)	1	(w/in 24", can p		D4) (caused by water)		
Iron Deposits (B5)				Marie Marie Control	04) (caused by water)		
Field Observations (in. from ground surface):			FAC Neutral Te	est (D5)			
	D-4-6-4-6-1						
	Depth of water (in.)	_					
Water Table Present? Yes X No	Depth to water (in.)						
Seeping in at that	depth but not yet filled?:	and the					
Saturation Present? Yes No	Depth to sat. (in.)	w	etland Hydrolog	y Present	? Yes No X		
(includes capillary fringe)	Epi Endo Unknown						
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous ins	pections), if	available:				
	DISTERNATION OF THE PARTY OF TH						
Remarks:			1000				
No the state of th	171	1	1 711	1 1.	1011		
Heavy recent rains. Wetter t	han normal. Jatur	ation o W	ater Table no	ot wil	n upper 12.		

## **Marshall Airport and Access Road Improvements**

Plot Number	HDR500	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth	
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.86426	
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.01722	







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

WEILAND DETERMINATION DATA FORM	
Project: Marshall Airport Borough/City: Kusiluk	k CA Date: 9/11
Applicant/Owner: ADoT	Sampling Point#: 50 /
	HDR Alaska, Inc.
Lat. (dec.°) (d. 8/04221 Long. 1/02.017106 ± NAD 83 Recorded	on GPS?: X Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	form: Velles Bottom Slope (%): O Aspect: N/
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/	
Photo nos./descriptions: 1065	Veg Type (Viereck Level 4 or other): III A 3 F
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wetter HGM type: 5/02c
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circ	:umstances"present? Yes X No
Are Vegetation V, Soil V, or Hydrology N naturally problematic? In Dry Season? Y	esNo If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled ar	Pa
Hydric Soil Present? Yes No within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	an total >100%.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. None 5	That are OBL, FACW, or FAC:(A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8	The state of the s
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	0.0
1. Bet, nan. 10 Y FAC 7.	
2. Vac. vl. 5 4 FAC 8.	
3. Interest 5 4 FACW 9.	FAC species <u>73</u> x3= <u>219</u>
4. Sul. 500 5 FAC 10.	FACU species X4= O
6. 12.	UPL + NL species O - X5=
Total Sapling/Shrub Cover: 25	Column Totals: <u>98</u> (A) <u>249</u> (B)
50% of total cover: 12.5 20% of total cover: 5	251
Herb Stratum	Prevalence Index = B/A = 2.5 9
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Cal. can. 45 4 FAC 12.	
2. Fgv. Flv. 10 Obl 13.	Hydrophytic Vegetation Indicators:
3. Car. agu. 10 OBL 14.	Dominance Test is >50%
4. Equ. orv. 3 FAC 15.	Prevalence Index is ≤3.0
5. Des. cae. 5 FAC 16.	Morphological Adaptations (Provide supporting
6 17 18	data in Remarks or on a separate sheet)
8	Problematic Hydrophytic Vegetation (Explain)
9	
10 21	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: +3	ALLON DELICATION OF A STREET OF THE STREET O
50% of total cover:	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 10 x / 0 % of bare ground: 5	Vegetation Yes NoNo
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	rissoliti
Remarks:	A COLUMN TO THE RESERVE TO THE RESER

SOIL	The state of the s	-			HELL MA		Sampling Point#: 50			
Profile Description: (Describe to the depth needed	to document the ir	ndicator	orconfirm	the abse	nce of indica	tors)				
Depth HorizonSoil Matrix	Red	lox Featu	ires			a, à dip.	A CAMPINE OF			
(in.) (opt.) Color (moist) %	Color (moist)	and the second	Type <sup>1</sup>	Loc <sup>2</sup>	Toyture	(pos/	Remarks			
0-5 0e	COIOI (MOISL)	70	Type	LUC	_Texture_	neg)	(or use comment number)			
C 17 00 100 -		— .	-		001					
3-17 18g 10 G4 4/1 180			-		GRLO	+				
· Section 1			-		a many and		No. of the last of			
and the second second		S Avrin			6.0	To do	Service Charles Inc.			
		3366				T				
(196) 15 Y			0.10				Vanis and the			
X and X		-			PRINCE OF STREET	_				
		-	-	-			7 12 4			
	Maria Maria Per		THE STATE OF THE S		-	1	English Associates World			
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Redu	ced Matrix, CS=C	oated Sa	and Grair	ıs <sup>2</sup> Locatio	on: PL = Pore	Lining, RC	= Root Channel, M = Matrix			
Hydric Soil Indicators (check ones that apply, mea	sure from top of n	nineral l	ayers un	less othe	rwise noted	):	St. Apr. St. Securi			
Standard Indicators:	Indicators for	SECURO CONTRACTOR			TO STATE OF THE ST					
Histosol or Histel (A1)			-	ace (A11		Alaska C	olor Change (TA4)			
Histic Epipedon (A2) (8-16" organics, sat'd,				400 (7111)	7	1				
underlain by mineral soil with chroma ≤2)	_/U_Depleted	d Matrix (	F3)		_/\	/_ Alaska A	lpine Swales (TA5)			
N Black Histic (A3)	A Redox D	ark Surfa	ace (F6)		Λ	Alaska R	edox with 2.5Y Hue			
X Hydrogen Sulfide (A4) (within 12" of mineral	0.1		- 17	-1	- ^	J AK Gleve	ed without Hue 5Y or			
surface; @" in this pit	// Depleted	Dark St	лпасе (н	()	+		er Underlying Layer.			
	N Redox D	epressio	ns (F8)		1	α,α-dipyr	idyl positive (see pg. 91)			
Alaska Gleyed (A13)					1	1	w organic matter, low iron, high			
Λ /	Ned Pare				70	pH, rece	ently developed., see p.91 of			
Alaska Redox (A14)	_/_ Very Sha	allow Dar	k Surface	e (F22)		Suppler	nent; explain in Remarks)			
Alaska Gleyed Pores (A15)	3One indicator	of hydro	phytic ve	getation,	one primary in	ndicator of w	etland hydrology, and an			
Market Andrews and the San Section 19	appropriate lar	ndscape	position	must be p	resent unless	disturbedo	r problematic.			
	*Give details o		ange in l	Remarks.			Control on the			
Restrictive Layer (if present)	Drainage Class	s: PD		STATE			2011			
Type: 10/AC	Soil Map Unit N	Name:		Hyd	Iric Soil Pres	ent?	Yes No			
Depth (inches): N/A							TIME A A A			
Comments:										
1, 100										
3. Would meet AK Gleyed wort Hue	50 1 1	. 1		0	0. 11	1.				
3. WISTA THEET HA Greyar WIOUT FIVE	of Underly	ing e	org -1	105 1	7 1100 5 VE	matic.	Committee of the second			
HYDROLOGY		0 .								
Wetland Hydrology Indicators (check ones that app	ly, measure from	soil sur	face):	Seco	ndary Indicat	ors (at least	2 are required)			
Primary Indicators (any one indicator is sufficient)	5.0			The surrounded	Water-Staine		A STATE OF THE PARTY OF THE PAR			
✓ Surface Water (A1)	ce Soil Cracks (B6)				N Drainage Patterns (B10)					
	ation Visible on Ae		on (P7)		Oxid'd Rhizospheres on Living Roots (C3) (within 12")					
1.1				-11						
Saturation (A3) (w/in 12") Spars	ely Vegetated Cor	ncave Su	rface (B8	) 7	Presence of F (pos. α,α or s					
Water Marks (B1)	eposits (B15)			N	Salt Deposits	Market and the second s				
✓ Sediment Deposits (B2)  ✓ Hydro	gen Sulfide Odor (	(C1)		N:	Stunted or Str	essed Plan	ts (D1)			
I Druge	ason Water Table		/in 12"-24"				- Depression			
	l, 12"-40" organic)	s (02)(		4.6	Shallow Aquit		0 61			
Algal Mat or Crust (B4)	(explain)				(w/in 24", can p		n 12")			
V Iron Deposits (B5)				NI	Microtopograp	hic Relief (I	04) (caused by water)			
7					AC Neutral T					
Field Observations (in. from ground surface):	P. 1			17		301(23)				
Surface Water Present? Yes X No	Depth of water	(in ) 1	"	- '						
			011							
Water Table Present? Yes No	Depth to water		2				W to			
Seeping in at that	depth but not yet f	illed?:	T				1			
Saturation Present? Yes X No	Depth to sat. (in	n.) 5		Wetl	and Hydrolog	y Present?	Yes No			
(includes capillary fringe)		Unknow	n			1				
Describe Recorded Data (stream gauge, monitoring w	The state of the s	The state of the s		ons), if ava	ailable:					
and the second s					The state of the s					
Remarks:			. 100	1.)	n/ n	01	T. THE WAY TO S			
thos in low spots. Iron she	en an surt	ou u	Jaki	154211	) on u	7.				
						0-1				

Plot Number	HDR501	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	WD: Wetland Determination	NWI Classification	PEM1C	Latitude (DD)	61.86422
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.01711







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

WETLAND DETERMINATION DATA FORM -	
Project: Marskall Airport Borough/City: Kusihal	CA Date: 9/11/2022
Applicant/Owner: ADoT	Sampling Point#: 502.
	HDR Alaska, Inc.
Lat. (dec.°) 61.864187 Long. 162.017122 ± 'NAD 83 Recorded of	on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Bermin Slope (%): 2 Aspect: w
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/convex/concave	
Photo nos./descriptions: NESW 250, Camera#:	The state of the s
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circu	
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season? Ye	es No If needed, explain answers here.
SUMMARY OF FINDINGS	position for the state of the state of the state of
Hydrophytic Vegetation Present? Yes No Is the sampled are	
Hydric Soil Present?  Yes No within a wetland?  Wetland Hydrology Present?  Yes No	
	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total >100%.  Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
1. More 5	*
3 7	Total Number of Dominant Species Across All Strata: 5 (B)
4. 8.	
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: (A/B)  Prevalence Index worksheet:
50% of total cover: 20% of total cover:	2, 3
Sapling/Shrub Stratum (woody plants < 3" dbh)  Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
1. Pop. tre. 3 FACU 7. Pop. bal. 3 FACU	OBL species 3 X1= 3
2 Pic. sla. 1 FACU 8 Sal, p. 1. 10 & FACW	FACW species 25 X2= 56
3. Vac. u.li. 10 4 FAC 9. Bet. gla. 5 FAC	FAC species <u>68</u> X3= <u>264</u>
4. Spirster 5 FACU 10.	FACU species 15 X4= 60
5. Rho. tom. 15 Y FACW 11.  6. Bet. nan. 3 FAC 12.	UPL + NL species X5=
Total Sapling/Shrub Cover: 55	Column Totals: (A) 317 (B)
50% of total cover: 27.5 20% of total cover: 1	2.9/
Herb Stratum	Prevalence Index = B/A = 2,86
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Eq. J. arv. 25 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Des. cre. 15 4 FAC 13.	
3. Eriang. 3 OBL 14.	Dominance Test is >50%  ✓ Prevalence Index is ≤3.0
4. Cha. a vis. 3 FAC 15.  5. Cal. can. 10 FAC 16.	7
617	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
718	Problematic Hydrophytic Vegetation (Explain)
8	- Problematic Hydrophytic vegetation (Explain)
9	1
10 21	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 56	
50% of total cover: 28 20% of total cover: 11.2	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 10x / b  % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks:	
	1.
Bern alma S. the and of six was 3 5 hinher than 5	W/ am dine

Profile Description:	(Describe to the de	onth needed	to document the	indicate	or or confirm	othe abse	nce of indicat	ore)	Sampling Point#: 302		
						Title abse	ence of indical	Million and L	1 1 1 1 1 1		
Depth Horizon	Soil Matrix	0.	Commence A commence of the control	edox Fea	a more and a second	- XC	6	α,α dip.	Domada		
(in.) (opt.) 0-2 0;	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc²	Texture	(pos/ neg)	Remarks (or use comment number)		
2-12 3,	10424/3	100		alam.	-		Loan	N	F.II		
12-20 B	10424/2	75 -	7.54R 3/3	25	C	M	Loan	12	16		
	Me pass a 12.			- Fore		-			W 1. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
		Constitution.	office and a second	2 118	The state of		F-1-18				
		Par	234		AL THE STATE OF	The same	March No.		The second		
	X			The same	Tokal La				100 E 40 0		
						E S	10	100			
¹Type: C = Concentr	ration, D = Depletion	. RM = Red	uced Matrix. CS=	Coated	Sand Grain	ns <sup>2</sup> Locati	on: PI = Pore	Lining RC	= Root Channel, M = Matri		
Hydric Soil Indicato									- Not Granner, W - Matri		
Standard Indicators		1177	Indicators fo								
					w Dark Surf		41.6	Alaska C	olor Change (TA4)		
	n (A2) (8-16" organic					T-10 V 3 / 1	T		pine Swales (TA5)		
	mineral soil with chrom	ıa ≤2)		ed Matri			1				
Black Histic (A3	A particle statement design		Redox	Dark Su	rface (F6)			_ Alaska R	edox with 2.5Y Hue		
Hydrogen Sulfi	de (A4) (within 12"of	mineral	Deplet	ed Dark	Surface (F	7)			d without Hue 5Y or		
Thick Dark Surf			Paday	Donroce	sions (F8)				er Underlying Layer		
						-1	* 1		dyl positive (see pg. 91)		
Alaska Gleyed	(A13)	+	Red Pa	arent Ma	terial (F21)		-	Other (Lo	w organic matter, low iron, hig ently developed., see p.91 of		
Alaska Redox (	A14)		Very SI	hallow D	ark Surface	e (F22)		Supplen	nent; explain in Remarks)		
Alaska Gleyed	Pores (A15)		<sup>3</sup> One indicate	or of hyd	rophytic ve	getation,	one primary in	dicator of w	etland hydrology, and an		
			appropriate l ⁴Give details	andscap of color	change in	must be p Remarks	resent unless	disturbedo	r problematic.		
Restrictive Layer (if p	resent)		Drainage Cla			TOTHERO.					
Type: Nm			Soil Map Unit		V	Hyd	iric Soil Pres	ent?	Yes No X		
Depth (inches):	NIA								100		
Comments:	12.37								N. V.		
1. 16 20			1000				7 3 3				
3. No orman	1. On for a	mblan 1	lic indicato	e + .A	J - 200	anni t	e londers	0. 020	La - ha - aa		
0	009 2009) 101 101	P ODP MAICO	- D Marcaro	7 . 10	or appe	Diod 124	a concre	ye pes	FIDA - OCT WV,		
YDROLOGY	ما داد الانتاب المسالم	4b . 4									
Wetland Hydrology			ply, measure ποι	m soll s	urface):	A .			2 are required)		
Primary Indicators (	774	20011	0-1101-70	0)		4.1	Water-Stained Leaves (B9)				
Surface Water (A High Water Table			ce Soil Cracks (B		(D7)		✓ Drainage Patterns (B10)				
			lation Visible on A	-	200						
Saturation (A3) (		Span	sely Vegetated Co	oncave S	Surface (B8	3)	Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")				
Water Marks (B1)		Marl I	Deposits (B15)			N	△ Salt Deposits (C5)				
Sediment Depos	its (B2)	M Hydro	gen Sulfide Odo	r(C1)		N	Stunted or Str	essed Plant	s (D1)		
Drift Deposits (B3	3)		eason Water Tab		(w/in 12"-24'		Geomorphic P				
Algal Mat or Crus	t (B4)	01	al, 12"-40" organic) (explain)			N	Shallow Aquit	ard (D3)	- 408)		
A / Mai		/// Other	(explain)				(w/in 24", can p		04) (caused by water)		
Iron Deposits (B5	"						FAC Neutral T		)-i) (caused by water)		
Field Observations (in	, from ground surface	ce):				+	AONCUIAIT	est (DJ)			
Surface Water Preser		No X	Depth of water	er(in.)							
Water Table Present?		No X	Depth to water	Catha Al Research	711-1-1						
20.0 . 1000111.			depth but not ye								
Saturation Present?		11				141-11	a m al   1 k	Desared	V V		
includes capillary fring	Yes	No X	Depth to sat.			Wet	and Hydrolog	y Present?	Yes No X		
Describe Recorded Da		monitoring	Epi Endo			ons) if ave	ailable:	15			
			.on, donar priotos	, pievioi	as moperal	, 10 j, 11 a V	anabic.				
Remarks:	The Youth	2	1								
rifile moist	but not sur	turated							A STATE OF THE STA		

Plot Number	HDR502	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.86419
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.01712







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: W

Plot Number	HDR503	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86408
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.01728

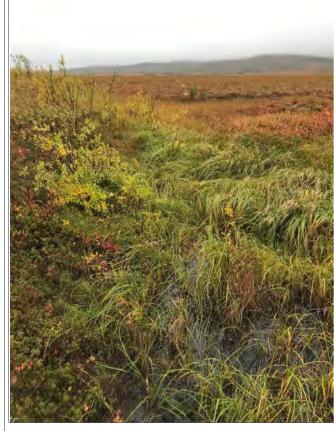






Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

WEILAND DETERMINATION DATA FORM -	Sant Live Will of Boule & Cley / Colores
Project: Marshall Air port Borough/City: Kusi Vak	
Applicant/Owner: ADOT	Sampling Point#: 504
	IDR Alaska, Inc.
Lat. (dec.°) 61. 863950 Long. 167. 016920 ± NAD 83 Recorded of	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/convex/concave	The state of the s
Photo nos./descriptions: NESW SV) X7 Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circu	
Are Vegetation $ ot N, Soil  ot N, or Hydrology  ot naturally problematic? In Dry Season? Yes$	sNo _X If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled are	
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total > 100%.  Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	Dominance restworksneet.
Species   Cov.%   Dom?   Ind.   Species   Cov.%   Dom?   Ind.     1.	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
1.100 nl 5	The state of the s
3	Total Number of Dominant Species Across All Strata:
4. 8.	(D)
THE RESIDENCE OF THE PROPERTY	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.  1. Bet, nah. 10 FAC 7.	OBL species <u>23</u> X1= <u>23</u>
2. Emp. n.a. 15 Y FAC 8.	FACW species 55 X2= 10
3. Rhs. ton, 20 Y FACW9.	FAC species 41 X3= 123
4. Vac. v1:, 15 Y FAC 10.	FACU species X4=
5. And. pol. 5 EACW11.	UPL + NL species X5=
6. Vac. oxy. 3 OBL 12.	Column Totals: 119 (A) 25(0 (B)
Total Sapling/Shrub Cover: 68	215
50% of total cover:	Prevalence Index = B/A =
Herb Stratum	
Abs. Cov. % Dom? Ind.  1. Eri. Vag. 30 Y FACW 12.	
2. Eri. any 20 4 OBL 13.	Hydrophytic Vegetation Indicators:
3. Ped 1 = 14.	Dominance Test is >50%
4. Car. loig. 1 FAC 15.	Prevalence Index is ≤3.0
5 16	Morphological Adaptations <sup>1</sup> (Provide supporting
6	data in Remarks or on a separate sheet)
7 18 18	Problematic Hydrophytic Vegetation 1 (Explain)
9. 20.	
10 21	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 52	
50% of total cover: 20% of total cover: 10.4	Hydrophytic
Circular 1/10-ac plot 🐰 or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks: Lichen = 15%	

Profile Description: (Describe to the	depth needed	to document the	indicate	or or confirm	the abo	ahoe of Indicat	om)	Sampling Point#: 504		
Depth Horizon Soil Mat			edox Fea		ille aus	ence of indicat		The state of the s		
(in.) (opt.) Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	α,α dip. (pos/ neg)	Remarks (or use comment numbe		
5-23 00		7			7 0	~	NT			
V						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
3000 to 27 - 4 - 1							<u> </u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Type: C = Concentration, D = Deplet								Root Channel, M = Matr		
Hydric Soil Indicators (check ones to Standard Indicators:	nat apply, mea						:	half out a life guile		
V Histosol or Histel (A1)		Indicators fo		w Dark Surf			Alaaka C	olor Change <sup>4</sup> (TA4)		
Histic Epipedon (A2) (8-16" organ		0.1	ed Matrix		acc (A11	N		pine Swales (TA5)		
underlain by mineral soil with chr	oma ≤2)	4.1		rface (F6)	Terri I	N		edox with 2.5Y Hue		
Hydrogen Sulfide (A4) (within 12 surface; @" in this pit	of mineral	.1		Surface (F	7)	N		d without Hue 5Y or		
Thick Dark Surface (A12)	1		sions (F8)		N		r Underlying Layer dyl positive (see pg. 91)			
N Alaska Gleyed (A13)		1 0		terial (F21)		N	Other (Lov	v organic matter, low iron, his		
Alaska Redox (A14)	Very Shallow Dark Surface (F22)  pH, recently developed., see p.91o Supplement; explain in Remarks)									
N Alaska Gleyed Pores (A15)	la interes	<sup>3</sup> One indicate appropriate I <sup>4</sup> Give details	andscap	be position	must be p	resent unless	dicator of we disturbed or	etland hydrology, and an problematic.		
Restrictive Layer (if present)		Drainage Cla	iss: UP	0				\ /		
Type: Note   Not		Soil Map Uni	t Name:	TER .	Hyd	dric Soil Prese	ent?	Yes No		
2.	1.					The state of the s				
YDROLOGY Netland Hydrology Indicators (check	ones that and	ly maneura fran	m soil su	urfo o o );	Con	andon Indicate	(-+1+	0		
Primary Indicators (any one indicator		ny, measure iroi	11 5011 51	uriace).		Water-Stained		2 are required)		
Surface Water (A1)		ce Soil Cracks (B	6)		. /	Drainage Patte				
High Water Table (A2) (w/in 12")	<u></u> lnund	ation Visible on A	Aerial Ima	agery (B7)		Oxid'd Rhizospheres on Living Roots (C3) (within 12"				
Saturation (A3) (w/in 12")  Water Marks (B1)	. 1	ely Vegetated Co	oncave S	Surface (B8	, ,	Presence of Reduced Iron (C4) (pos. α,α or soil color charge w/in 12")				
Sediment Deposits (B2)		gen Sulfide Odo	r(C1)		1	Salt Deposits ( Stunted or Stre	Control of the Contro	(D1)		
Drift Deposits (B3)	N Dry-Se	eason Water Tab	ole (C2) (	(w/in 12"-24"	CATALOG AND	Geomorphic P		(01)		
Algal Mat or Crust (B4)		al, 12"-40" organic) (explain)			N	Nallow Aquitard (D3)				
Iron Deposits (B5)	in The	(				(w/in 24", can perch H <sub>2</sub> O w/in 12")  Microtopographic Relief (D4) (caused by water)				
ield Observations (in. from ground sur	face):				7	FAC Neutral Te	est (D5)			
surface Water Present? Yes X	No _	Depth of water	er(in.)	1"	-					
Vater Table Present? Yes X	No	Depth to water		5"						
See	ping in at that	depth but not ye	t filled?:							
Saturation Present? Yes X	_ No	Depth to sat.	(in.)	411	Wet	and Hydrolog	y Present?	Yes No		
includes capillary fringe)	monitoring	Epi Endo	Unkno		ma\ 'f -	-Nahla				
Describe Recorded Data (stream gauge	, monitoring w	eii, aenai photos	, previol	us inspectio	ons), if av	allable:		ar when wy		
emarks:	Tell t	1 /4 1 2			1.77		6171111			
ome Hzd in low areas.										

Plot Number	HDR504	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	WD: Wetland Determination	NWI Classification	PSS3/EM1B	Latitude (DD)	61.86395
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.01692





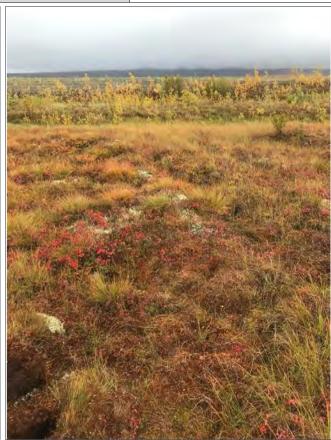


Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Plot Number	HDR505	Wetland Status	Upland	Vegetation Type	Bare Ground (Disturbed)
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.8636
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.0167







Photo Type: Hydrology

Direction: W

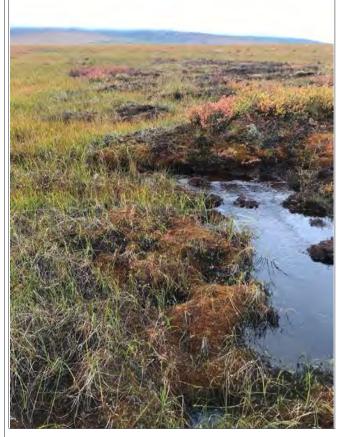
Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Plot Number	HDR506	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86425
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.01466





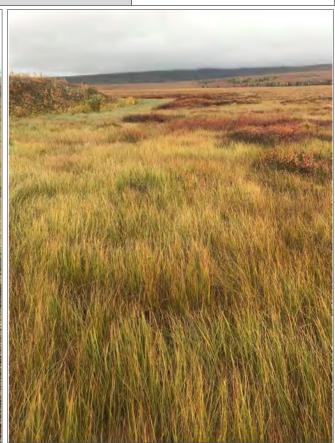


Photo Type: Hydrology

Direction: S

Photo Type: Hydrology

Direction: W

Photo Type: Vegetation

Direction: N

A // A.	
Project: Marshall Airport Borough/City: Kusilva	k CA Date: 9/11/2022
Applicant/Owner: A D6 T	Sampling Point#: 50 7
	HDR Alaska, Inc.
Lat. (dec.°) 61. 864 666 Long 162.021331 ± NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Lands	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	
Photo nos./descriptions: UESW 50,1 X Z Camera#:	_ Veg Type (Viereck Level 4 or other): Z
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circ	
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season? Y	esNo If needed, explain answers here.
SUMMARY OF FINDINGS	process strategist of var earns for pr
Hydrophytic Vegetation Present? Yes No Is the sampled an	ea ·
Hydric Soil Present? Yes No within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	in total >100%.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species         Cov.%         Dom?         Ind.         Species         Cov.%         Dom?         Ind.           1.         None         5.	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
2. 6.	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8	
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: (A/B)  Prevalence Index worksheet:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.  1. Bet. nan. 10 Y FAC 7. Almsin. 1 FAC	OBL species 2 X1= 2
2. Sal. NI. 10 4 FACW 8.	FACW species 25 X2= 50
3.R.W. Jom. 7 FACW 9.	FAC species 46 X3= 138
4. Vac. uli, 5 FAC 10.	FACU species X4=X
5. Pop. tre. 1 FACU 11.	UPL + NL species D X5= O
6. Sal. bar. 5 FAC 12.	Column Totals: 81 (A) 222 (B)
Total Sapling/Shrub Cover: 39	
50% of total cover: 19.5 20% of total cover: 7.8	Prevalence Index = B/A = 2.74
Herb Stratum	production of the second secon
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Des. cal, 25 4 FAC 12.	Hydrophytic Vegetation Indicators:
2. Cha. ang, 7 FACU 13.  3. Jun. cas. 5 FACW 14.	> Dominance Test is >50%
4. Poa. Sp. / - 15.	Prevalence Index is ≤3.0
5. Eri Vas 3 FACW 16.	Morphological Adaptations (Provide supporting
6. Eris any 1 OBL 17.	data in Remarks or on a separate sheet)
7. Equ. Plu, 1 0BL 18.	Problematic Hydrophytic Vegetation (Explain)
8	1 Toble Made Hydrophytic Vegetation (Explain)
9	A STATE OF THE STA
10	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22	Settled of problematic.
50% of total cover: 21.5 20% of total cover: 8.6	
Circular 1/10-ac plot or other plot dimension: 5 × 5 % of bare ground:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks:	
~ 5 from toe of slope, ~ 4 higher than toe, Very close	to wetland boundary.

Profile Description: (Describe to the depth needed)	o document the	indicate	or or confirm	the ahs	ence of indicate	ure)	Sampling Point#: _>07
				Ture abs	erice of indicate	206 2434	
Depth Horizon Soil Matrix	= 90 W USHES	edox Fea				a,a dip.	Domodeo
11 11 01	Color (moist)	%	Type	Loc <sup>2</sup>	Texture	neg)	Remarks (or use comment number)
0-2 Fill 1092 42 100					GRLO		
2-4 1 1042 5/4 100					GRLD	N	Visit in the Control of the Control
4-20 10425/4 85	7	1140-1	-8	-	GRLO	N	State of the state
54 5/1 15	Fa Salara II	-	THE S	U	1	K)	Was a State of the same
to make a fundation of the second				-		10	Victory and total and
The state of the s	Za lake			32-14	Total Code	-	Marin management parties
	X						I I I I I I I I I I I I I I I I I I I
The state of the s			-	-	×	-	
Transic Co Consentation By Barbeira BM - But a	- 114 41 00			2.			
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Redu							= Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, meas					The state of the s		THE THE TOTAL STREET
Standard Indicators:	Indicators fo				A /		
Histosol or Histel (A1)	// Deplet	ed Belov	w Dark Surf	ace (A11	) /	_ Alaska C	Color Change (TA4)
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Deplet	ed Matri	x (F3)			_ Alaska A	Alpine Swales (TA5)
Black Histic (A3)	Redov	Dark Su	rface (F6)			Alaska F	Redox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of mineral						-	A MORE COMMITTEE TO THE PERSON OF THE PERSON
surface; @" in this pit	Deplet	ed Dark	Surface (F7	7)	+		ed without Hue 5Y or er Underlying Layer
Thick Dark Surface (A12)	Redox	Depress	sions (F8)				ridyl positive (see pg. 91)
Alaska Gleyed (A13)			iterial (F21)		V		ow organic matter, low iron, high
	and resident control					pH, rec	ently developed., see p.91 of
Alaska Redox (A14)			ark Surface				ment; explain in Remarks)
Alaska Gleyed Pores (A15)	One indicate	or of hyd	rophytic ve	getation,	one primary inc	licator of v	vetland hydrology, and an
	Give details				present unless	isturbed	or problematic.
Restrictive Layer (if present)	Drainage Cla			Tomanto			
Type: Wone	Soil Map Uni		- 0)	Hv	dric Soil Prese	n#2	Yes No X
Depth (inches): N/A	GOII WIAP OIT	t ivallie.	* 1	Пу	unc son Frese	III	resNo
Comments:	-83				- 1 × × × ×		The second second
1.					Pecel	and Y	
2. 1 1	0 . 1.	00	11 .		2/30/4		
3. This trophic. Gravely loan fill,	st airstrip	0 711	1 prosn	u.	21.5		
HYDROLOGY			•		- NINTE		
Wetland Hydrology Indicators (check ones that appl	y, <b>measure fro</b> i	m soil s	urface):	Sec	ondary Indicato	rs (at leas	t 2 are required)
Primary Indicators (any one indicator is sufficient)				N	Water-Stained	Leaves (B	9)
	e Soil Cracks (B	6)	medicinal?		Drainage Patte	ms (B10)	Laboratoria de la compansión de la compa
High Water Table (A2) (w/in 12") Inunda	tion Visible on A	Aerial Im	agery (B7)		Oxid'd Rhizosp	heres on l	iving Roots (C3) (within 12")
Saturation (A3) (w/in 12") Sparse	ly Vegetated C	oncave S	Surface (B8	1	Presence of Re		
	eposits (B15)				(pos. α,α or soi		ge w/in 12")
	en Sulfide Odo	-(C1)			Salt Deposits (		+ (D4)
			/ // 40" 04"		Stunted or Stre		
	ason Water Tat , 12"-40" organic)		(W/In 12"-24"		Geomorphic Po		) = 11444 = 176
1	explain)			+	Shallow Aquita (w/in 24", can pe		in 12")
Iron Deposits (B5)							D4) (caused by water)
+ 11011 Deposits (Do)					FAC Neutral Te		1
Field Observations (in. from ground surface):	The order		)e	17		(/	
Surface Water Present? Yes X No X	Depth of wat	er(in.)	l"	W 16			
Water Table Present? Yes X No	Depth to wat	70.0	8				
Seeping in at that d	The second second	Charles and the	<u>v</u>				
			ES RE				
Saturation Present? Yes No	Depth to sat.		0	Wet	land Hydrology	Present	? Yes / No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring we	Epi Endo	Unkno		ma\ # -	allable:	1000	HUM TOWN THE PARTY OF
Detaile Recorded Data (Stream gauge, monitoring we	aenai photos	s, previoi	us inspectio	nis), if av	allable:		
Remarks: 11		15-27-1	4	HO FF I			
Heave (a) a reflect the norm	brism,			- 1			The state of the s
					-04		
Heavy rains, wetter than nord	nal.				687		No.

Plot Number	HDR507	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.86467
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.02133





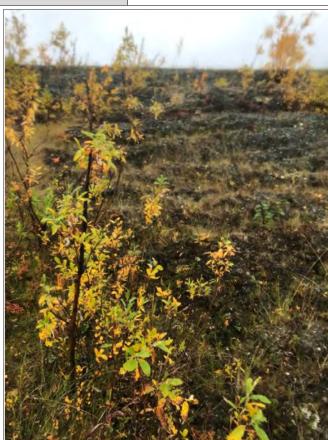


Photo Type: Soils Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Plot Number	HDR508	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86472
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.02133

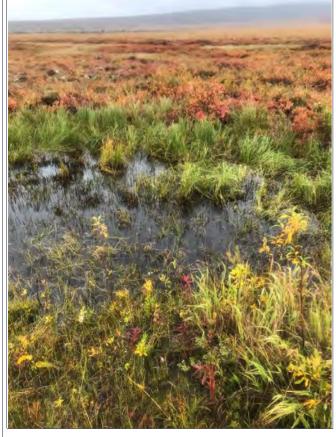






Photo Type: Hydrology

Direction: N

Photo Type: Hydrology

Direction: W

Photo Type: Vegetation

Direction: E

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Aisfor Borough/City: Kusilva	k CA Date: 9/11
Applicant/Owner: APOT	Sampling Point#: 50.9
Investigator(s): 7 H /B/	HDR Alaska, Inc.
Lat. (dec.°) 61.864838 Long. 162.021714 ± 'NAD83 Recorded of	on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfe	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave	convex/concave NWI classification: PSSI/EmI/
Photo nos./descriptions: NESW 2-501   Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation N, Soil N, or Hydrology V significantly disturbed? Are "Normal Circu	umstances" present? Yes V No
Are Vegetation , Soil , or Hydrology  naturally problematic? In Dry Season? Ye	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No lethe complete	the state of the s
Hydric Soil Present? Yes No Is the sampled are within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % cal	n total >100%.
The second secon	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. <u>Non.</u> 5	That are OBL, FACW, or FAC:(A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover:	Percent of Dominant Species
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC: (A/B)  Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	10 10
1. Box, nan. 25 Y. FAC 7.	OBL species X1= X1=
2. Vpc. vli, 15 Y FAC 8.	FACW species (0 X2= 120
3. Rho, +2m, 10 FACW 9.	FAC species 40 X3= 120
4. MAD. POT. 5 FACT 10.	FACU species X4=
6. 12.	UPL + NL species X5=
	Column Totals:
0.0	2 2.1
	Prevalence Index = B/A =
Herb Stratum  Abs.Cov.% Dom? Ind.  Abs.Cov.% Dom? Ind.	
Abs. Cov. % Dom? Ind.  1. Erg. Jug. 45 4 FAW 12.	THE PROPERTY OF THE PROPERTY O
2. En. aus. 7 OBL 13.	Hydrophytic Vegetation Indicators:
3. Luz. wah. 5 OBL 14.	Dominance Test is >50%
4 15	_X_ Prevalence Index is ≤3.0
5 16	Morphological Adaptations (Provide supporting
6	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation (Explain)
8 19	
10 21.	1 Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 57	
50% of total cover: 28.5 20% of total cover: 11.4	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 10x 10 % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks:	
Licher = 19/10	

Depth Horizon	Soil Matrix		Re	dox Fea	atures			a, a dip,	1911 111
(in.) (opt.)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc2	Texture	(pos/	Remarks
-3 · Oi		7	4	T	77			neg)	(or use comment number
-20 De		-		0	70	L		1/	
								· IIII	
			W. Name of the	1				Section 1	The second
							•		A CONTRACTOR OF THE PARTY OF
A 31(3)			Χ		100	100			Bais Mary Mary
	X	NOW THE			- W. T.		1		The state of the s
vpe: C = Concentrat	tion. D = Depletion		Iced Matrix CS=	Coated	Sand Grain		n: Pl = Pore	Lining PC	= Root Channel, M = Matri
ydric Soil Indicators									- Root Channel, M = Math
andard Indicators:	*% = 1	X	Indicators fo						14-1-15-20 16
Histosol or Histel	(A1)				w Dark Surf		4 .	Alaska Co	olor Change <sup>4</sup> (TA4)
	A2) (8-16" organics		1	ed Matrix		d	1	-	pine Swales (TA5)
	neral soil with chroma	a ≤2)							
Black Histic (A3)	e (A4) (within 12"of	minoral			rface (F6)		-		edox with 2.5Y Hue
surface; @	" in this pit	IIIIciai	Deplete	ed Dark	Surface (F	7)	-	_ AK Gleye Redde	ed without Hue 5Y or er Underlying Layer
Thick Dark Surface	ce (A12)		Redox	Depress	sions (F8)				dyl positive (see pg. 91)
Alaska Gleyed (A	13)		Red Pa	rent Ma	terial (F21)			Other (Lo	w organic matter, low iron, hig
Alaska Redox (A					ark Surface	- C -		pH, rece	ently developed., see p.91 of nent; explain in Remarks)
Alaska Gleyed Po	- A					SE OF CHILDREN SEA			STATE OF THE STATE
	3103 (7(10)		appropriate la	andscap	e position	must be pi	resent unless	disturbedo	etland hydrology, and an problematic.
estrictive Layer (if pre-	sent)		Drainage Clas	ss:	PD				10
Type: FN37.	4-1		Drainage Class Soil Map Unit		PD	Hyd	ric Soil Pres	ent?	Yes No No
Type: FN37.	2011				PD	Hyd	ric Soil Pres	ent?	Yes No
Type: FN37. Depth (inches):	4-1				PD	Hyd	ric Soil Pres	ent?	Yes No
Type: FN3t. Depth (inches): omments:	4-1				PD	Hyd	ric Soil Pres	ent?	Yes No
Type: FN3t. Depth (inches):	4-1				PD	Hyd	ric Soil Pres	ent?	Yes No
Type: FN3t. Depth (inches):  pmments:	4-1				PD	Hyd	ric Soil Pres	ent?	Yes No
Type: FN3t. Depth (inches):  Demments:  DROLOGY etland Hydrology Inc	20 //		Soil Map Unit	Name:	PD	Seco	ndary Indicate	ors (at least	2 are required)
Type: FN3t. Depth (inches): Depth (inches): DROLOGY etland Hydrology Incimary Indicators (ar	dicators (check on	sufficient)	Soil Map Unit	Name:	PD urface):	Seco		ors (at least	2 are required)
DROLOGY etland Hydrology Indicators (ar	dicators (check on any one indicator is s	sufficient)  Number	Soil Map Unit	Name:		Seco	ndary Indicate	ors (at least	2 are required)
Type: FN3t. Depth (inches): Depth (inches): DROLOGY etland Hydrology Incimary Indicators (ar	dicators (check on any one indicator is s	sufficient)  Number	Soil Map Unit	Name:		Seco V	ndary Indicate Vater-Stained Prainage Patte Oxid'd Rhizosp	ors (at least d Leaves (BS ems (B10)_ oheres on L	2 are required) 3) iving Roots (C3) (within 12"
Type: FN3t. Depth (inches): Depth (inches): DROLOGY etland Hydrology Indicators (ar	dicators (check or ny one indicator is s ) A2) (w/in 12")	sufficient)  Number Surface Inund	Soil Map Unit	n soil su	agery (B7)	Seco V V	ndary Indicate Vater-Stained Prainage Patte Dxid'd Rhizosp Presence of R	ors (at least I Leaves (B9 ems (B10)_ oheres on L educed Iror	2 are required) 3) iving Roots (C3) (within 12"
Depth (inches):	dicators (check or ny one indicator is s ) A2) (w/in 12")	Sufficient)  Surface Inund Spars	Soil Map Unit	n soil su	agery (B7)	Seco V V	ndary Indicate Vater-Stained Prainage Patte Oxid'd Rhizosp	ors (at least I Leaves (BS ems (B10)_ oheres on L educed Iror oil color chang	2 are required) 3) iving Roots (C3) (within 12"
Depth (inches):	dicators (check on my one indicator is s ) A2) (w/in 12")	Sufficient)  Surface Inund Spars Marl D	Soil Map Unit	n soil su	agery (B7)	Seco V	ndary Indicate Vater-Stained Prainage Patte Oxid'd Rhizosp Presence of Re (pos. q, q or so alt Deposits (	ors (at least d Leaves (BS erns (B10)_ oheres on L educed Iror oil color chang (C5)	2 are required)  3)  iving Roots (C3) (within 12" (C4) pe w/in 12")
DROLOGY etland Hydrology Indicators (ar / Surface Water (A1 / High Water Table ( / Saturation (A3) (W/ / Water Marks (B1) _ Sediment Deposits	dicators (check on my one indicator is s ) A2) (w/in 12")	Sufficient)  Surfact Inund Spars Marl D Hydro Dry-Se	Soil Map Unit	n soil su	agery (B7) Surface (B8	Seco V V V V V V V V V V V V V V V V V V V	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of Ri (pos. a, a or so calt Deposits (	ors (at least d Leaves (B3 ems (B10) _ oheres on L educed from ill color chang (C5)	2 are required)  3)  iving Roots (C3) (within 12" n (C4) ge w/in 12")  s (D1)
DROLOGY etland Hydrology Indicators (arr Surface Water (A1 High Water Table ( Saturation (A3) (w/ Water Marks (B1) Sediment Deposits Drift Deposits (B3)	dicators (check or ny one indicator is s ) A2) (w/in 12") in 12")	Sufficient)  Surfact Inund Spars Marl D Hydro Dry-Se minera	Soil Map Unit	n soil su	agery (B7) Surface (B8	Seco V V V V V V V V V V V V V V V V V V V	ndary Indicate Vater-Stained Oxid'd Rhizosp Presence of Ri (pos. a, a or so calt Deposits ( ctunted or Stre	ors (at least d Leaves (B3 ems (B10) _ otheres on L educed fror iii color chang (C5) essed Plant osition (D2)	2 are required)  3)  iving Roots (C3) (within 12" n (C4) ge w/in 12")  s (D1)
Type: FN3A Depth (inches): Dmments:  DROLOGY etland Hydrology Indicators (ar / Surface Water (A1 / High Water Table ( / Saturation (A3) (w/ / Water Marks (B1) _ Sediment Deposits _ Drift Deposits (B3) _ Algal Mat or Crust (	dicators (check or ny one indicator is s ) A2) (w/in 12") in 12")	Sufficient)  Surfact Inund Spars Marl D Hydro Dry-Se minera	Soil Map Unit	n soil su	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of Ri (pos. a, a or so calt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita w/in 24", can p	ors (at least d Leaves (B3 ems (B10) _ cheres on L educed Iror iii color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/iii	2 are required)  3)  iving Roots (C3) (within 12" n (C4)  pe w/in 12")  s (D1)
DROLOGY etland Hydrology Indicators (arr Surface Water (A1 High Water Table ( Saturation (A3) (w/ Water Marks (B1) Sediment Deposits Drift Deposits (B3)	dicators (check or ny one indicator is s ) A2) (w/in 12") in 12")	Sufficient)  Surfact Inund Spars Marl D Hydro Dry-Se minera	Soil Map Unit	n soil su	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of R (pos. α, α or so calt Deposits ( stunted or Stre Geomorphic P challow Aquita w/in 24", can p	ors (at least d Leaves (B9 ems (B10) _ otheres on L educed Iror oil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	2 are required)  3)  iving Roots (C3) (within 12" n (C4) ge w/in 12")  s (D1)
Type: FN3A. Depth (inches):	dicators (check on any one indicator is so) A2) (w/in 12") in 12") s (B2)	Sufficient)  Surface Inund Spars  Marl D Hydro Dry-Se minere	Soil Map Unit	n soil su	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of Ri (pos. a, a or so calt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita w/in 24", can p	ors (at least d Leaves (B9 ems (B10) _ otheres on L educed Iror oil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	2 are required)  3)  iving Roots (C3) (within 12" n (C4)  pe w/in 12")  s (D1)
Type: FN34. Depth (inches): De	dicators (check on any one indicator is so) A2) (w/in 12") in 12") s (B2) B4)	Sufficient)  Surface Inund Spars Marl D Hydro Dry-Se minera Other	Soil Map Unit	n soil su 6) erial Ima encave S (C1)	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of R (pos. α, α or so calt Deposits ( stunted or Stre Geomorphic P challow Aquita w/in 24", can p	ors (at least d Leaves (B9 ems (B10) _ otheres on L educed Iror oil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	2 are required)  3)  iving Roots (C3) (within 12" n (C4)  pe w/in 12")  s (D1)
DROLOGY etland Hydrology Indicators (arr Surface Water (A1 High Water Table ( Saturation (A3) (w/ Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust ( Iron Deposits (B5) eld Observations (in. for	dicators (check or ny one indicator is s ) A2) (w/in 12") in 12") s (B2) B4)	Sufficient)  Surfact Inund Spars Marl D Hydro Dry-Se minera Other	Soil Map Unit	n soil su 6) erial Ima oncave S (C1) er (C2) (	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of R (pos. α, α or so calt Deposits ( stunted or Stre Geomorphic P challow Aquita w/in 24", can p	ors (at least d Leaves (B9 ems (B10) _ otheres on L educed Iror oil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	2 are required)  3)  iving Roots (C3) (within 12" n (C4)  pe w/in 12")  s (D1)
Type: FN34.  Depth (inches):	dicators (check on any one indicator is so any one indicator is so and a so	Sufficient)  Surface Inund Spars Marl D Hydro Dry-Se minera Other	Soil Map Unit  Oly, measure from the Soil Cracks (Beation Visible on Alely Vegetated Colorosits (B15) gen Sulfide Odor the Soil Cracks (B6) the Soil Cracks	n soil su 65) cerial Ima oncave S r (C1) cle (C2) (	agery (B7) Surface (B8	Seco V V V S V S V S V S V S V S V S	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of R (pos. α, α or so calt Deposits ( stunted or Stre Geomorphic P challow Aquita w/in 24", can p	ors (at least d Leaves (B9 ems (B10) _ otheres on L educed Iror oil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	2 are required)  3)  iving Roots (C3) (within 12" n (C4)  pe w/in 12")  s (D1)
Depth (inches): Depth (inches): Depth (inches): DROLOGY  Tetland Hydrology Inches  Surface Water (A1 High Water Table (Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Marks (B1) Iron Deposits (B5)  Eld Observations (in. for face Water Present (Marks (B1))  The property of the present (Marks (B1))  The	dicators (check on any one indicator is so ) A2) (w/in 12") in 12")  (B2)  From ground surface? Yes Yes Seepin	Sufficient)  Surface Inund Spars Marl D Hydro Dry-Se minera Other	Soil Map Unit  oly, measure from the Soil Cracks (Boation Visible on A tely Vegetated Co teposits (B15) teposit	n soil su 6) erial Ima oncave S r (C1) lle (C2) (	agery (B7) Surface (B8	Seco V V V V V V V V V V V V V V V V V V V	ndary Indicate Vater-Stained Prainage Patte Oxid'd Rhizosp Presence of Ri (pos. α,α or so ealt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita w/in 24", can pe ficrotopograp AC Neutral Te	ors (at least d Leaves (BS ems (B10)_ obheres on L educed Iror ill color chang (C5) essed Plant osition (D2) and (D3) erch H <sub>2</sub> O win hic Relief (D	2 are required)  iving Roots (C3) (within 12" (C4) ge w/in 12")  is (D1)  10 (C2) (C4) (C4) (C5) (C5) (C5) (C5) (C5) (C5) (C5) (C5
Depth (inches):	dicators (check or ny one indicator is s ) A2) (w/in 12") in 12") s (B2) B4) from ground surface? Yes Seepin Yes	Sufficient)  Surface Inund Spars Marl D Hydro Dry-Se minera Other	Soil Map Unit  oly, measure from the Soil Cracks (Beation Visible on Allely Vegetated Colleposits (B15) gen Sulfide Odor teason Water Tab al, 12"-40" organic) (explain)  Depth of water Depth to water Depth to sat.	n soil su 6) erial Ima oncave S r (C1) er (in.) er (in.) filled?:_ (in.)4	agery (B7) Surface (B8 w/in 12"-24"	Seco V V V V V V V V V V V V V V V V V V V	ndary Indicate Vater-Stained Orainage Patte Oxid'd Rhizosp Presence of R (pos. α, α or so calt Deposits ( stunted or Stre Geomorphic P challow Aquita w/in 24", can p	ors (at least d Leaves (BS ems (B10)_ obheres on L educed Iror ill color chang (C5) essed Plant osition (D2) and (D3) erch H <sub>2</sub> O win hic Relief (D	2 are required)  iving Roots (C3) (within 12" (C4) ge w/in 12")  is (D1)  10 (C2) (C4) (C4) (C5) (C5) (C5) (C5) (C5) (C5) (C5) (C5
Depth (inches): Depth (inches): Depth (inches): DROLOGY  Tetland Hydrology Inches  Surface Water (A1 High Water Table (Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Marks (B1) Iron Deposits (B5)  Eld Observations (in. for face Water Present (Marks (B1))  The property of the present (Marks (B1))  The	dicators (check or by one indicator is s) A2) (w/in 12") in 12")  (B2)  B4)  from ground surface? Yes Yes Seepin Yes X	Sufficient)  Surface Inund Spars Marl D Hydro Dry-Se minera Other  No No ng in at that No	Soil Map Unit  oly, measure from the Soil Cracks (Beation Visible on Allely Vegetated Colorosits (B15) gen Sulfide Odor the Soil Cracks (Beation Visible on Allely Vegetated Colorosits (B15) gen Sulfide Odor the Soil Cracks (Beating to Soil Cracks (B15) gen Sulfide Odor the Soil Cracks (Beating to Soil Cracks (B15) gen Sulfide Odor the Soil Cracks (Beating to Soil Cracks (B15) gen Sulfide Odor the Soil Cracks (Beating to Soil Cracks (B15) gen Sulfide Odor the Soil Cracks (B6) the Soil Cra	n soil su soncave Soncave Son	agery (B7) Surface (B8 w/in 12"-24"	Seco V V V V V S V S V V S	ndary Indicate Vater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. a, a or so alt Deposits ( Stunted or Stre Seomorphic P Shallow Aquita w/in 24", can p dicrotopograp AC Neutral Te	ors (at least d Leaves (BS ems (B10)_ obheres on L educed Iror ill color chang (C5) essed Plant osition (D2) and (D3) erch H <sub>2</sub> O win hic Relief (D	2 are required)  iving Roots (C3) (within 12" (C4) ge w/in 12")  is (D1)  10 (C2) (C4) (C4) (C5) (C5) (C5) (C5) (C5) (C5) (C5) (C5

Plot Number	HDR509	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra	
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1B	Latitude (DD)	61.86484	
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.02171	





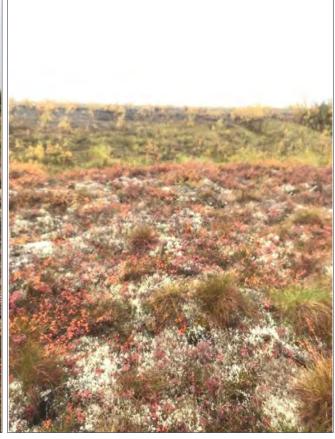


Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: S

Project: MARSHAII AIRPORT Borough/City: Kosilya		1-
Applicant/Owner: APOT		2022
1997/03	Sampling Point#:	2/0
V - ( , - 1 - /	HDR Alaska, Inc.	
Lat. (dec.°) 61.865627 Long. 162.034165 ± ', NAD 83 Recorded of		
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo		Aspect:
Local relief: Shape across slope: (linear/convex/concave Shape up/downslope: (linear)		
	Veg Type (Viereck Level 4 or other):	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:		ope
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circu		
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Ye	esNo_X If needed, explain answers	here.
SUMMARY OF FINDINGS	d history instantia	
Hydrophytic Vegetation Present? Yes No Is the sampled are	na filozofia Mila nagouna estaciya	
Hydric Soil Present? Yes No within a wetland?		
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):	
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % call	n total >100%.	area.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species	-
1. A Janl 5 5	That are OBL, FACW, or FAC:	5 (A)
2 6	Total Number of Dominant	~
3 7	Species Across All Strata:	5 (B)
4 8		1
Total Tree Cover:	Percent of Dominant Species	7
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC:  Prevalence Index worksheet:	(A/B)
Sapling/Shrub Stratum (woody plants < 3" dbh)		
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.		ultiply by:
1. Bet nan. 25 Y FAC 7. Emp, niz 15 Y FAC	OBL species X1=	1 /
2. Vac. vII. 15 Y DAC 8. And - pol. ? FACE	FACW species 83 X2= /	66
3. Pop. bal. 5 FALL 9. Sal. pul. 5 FACW	FAC species 56 X3=/	70
4. Rho. 4m. 15 Y FACW 10.	FACU species X4=_	20
5. Aln. s,n. 1. FAC 11.	UPL + NL species X5=	0
6. Sal. arb, 5 FACU12.	Column Totals: 147 (A) 3:	57 (B)
Total Sapling/Shrub Cover:	the state of	
50% of total cover: 44.5 20% of total cover: 17.8	Prevalence Index = B/A = 2.43	181
Herb Stratum	The second secon	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	The second second second	
1. Er., Vag. 55 Y FACW 12. 2. Er., and 3. OBL 13.	Hydrophytic Vegetation Indicators:	
3 14.	X Dominance Test is >50%	
415	Prevalence Index is ≤3.0	
516	Morphological Adaptations (Provid	o our postina
617	data in Remarks or on a separate	sheet)
7 18	Problematic Hydrophytic Vegetation	n <sup>1</sup> (Evolain)
8	1 Toblematic Hydrophytic vegetation	i (Explain)
9 20		
10 21	Indicators of hydric soil and wetland hydrobe present unless disturbed or problematic	
11 22	be present unless disturbed of problematic	
50% of total cover: 29 20% of total cover: 11.6		
Circular 1/10-ac plot or other plot dimension: 20 ×20 % of bare ground:	Hydrophytic Yes No	0. 1
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?	
(where applicable)		
Remarks:	A	With the second
	All the second s	

			to document the	indicator	OI COIIIIII	the abse	ence of indicat	ors)	
Depth Horizon	Soil Matrix	_ >	Re	edox Fea	tures			a,a dip.	THE PARTY NAMED IN
(in.) (opt.) C	color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	_Texture_	(pos/ neg)	Remarks (or use comment num
-4 B Z.	544/1	100		_	-	N. C.	3940	NT	TAY STREET, ST
-20 <u>be</u> _				~	1010		- yawana		
				119		1 <del></del>			
	W		X : a ·	_			(1) (1) (1) (1) (1)	on a life	Bodier e a dy fo
	X	<del></del>	Sur Justice	-	-	-	<del></del>	- 1	W Management
Type: C = Concentration	, D = Depletion	, RM = Redu	ced Matrix, CS=	Coated S	Sand Grain	ns <sup>2</sup> Locati	on: PL = Pore	Lining, RC	= Root Channel, M = Ma
lydric Soil Indicators (c									Think the state of the
tandard Indicators:		X	Indicators fo		ALC BOOK HISTORY STATES	THE RESERVE OF THE PARTY OF THE	And the second s		. WINDSAND RE
Histosol or Histel (A1	•	to Land	N Deplet	ed Below	Dark Surf	ace (A11	<u>A</u>	Alaska C	color Change (TA4)
Histic Epipedon (A2) underlain by miner	(8-16" organics al soil with chrom	s,sat'd, a≤2)	N Deplete	ed Matrix	(F3)		1	Alaska A	lpine Swales (TA5)
Black Histic (A3)	4) ( ''' : 40" (	MA	_/V Redox	Dark Sur	face (F6)		1	0	edox with 2.5Y Hue
Hydrogen Sulfide (A surface; @" in	this pit	mineral	_ N Deplete	ed Dark S	Surface (F	7)			ed without Hue 5Y or er Underlying Layer
M Thick Dark Surface (	A12)		_N Redox	Depressi	ions (F8)		N	1	idyl positive (see pg. 91)
Alaska Gleyed (A13)					erial (F21)		a	pH, rec	ow organic matter, low iron, ently developed., see p.910
Alaska Redox (A14)  Alaska Gleyed Pores					ark Surface				ment; explain in Remarks)
Alaska Gleyeu Pole	, (A15)		appropriate la 4Give details	andscap	e position	must be p	resent unless	dicator of w disturbed o	etland hydrology, and a r problematic.
Restrictive Layer (if preser	it)		Drainage Cla	ee. 1/D	-				
				33. V P	V			1	V
Type: Nou	10 -	6	Soil Map Unit	Contract to	V	Hyd	Iric Soil Pres	ent?	Yes No
Type:	/AC	4	A STATE OF THE STA	Contract to		Hyd	Iric Soil Pres	ent?	Yes_X No
Type:	/AC	*	A STATE OF THE STA	Contract of the		Hyd	Iric Soil Pres	ent?	Yes_X No
Type: Option (inches):	/AC	•	A STATE OF THE STA	Contract of the		Hyd	Iric Soil Pres	ent?	Yes_X_ No
Type: Once of the comments:	/AC		A STATE OF THE STA	Contract of the		Hyd	Iric Soil Pres	ent?	Yes No No
Type:	VAC ENS	nes that appl	Soil Map Unit	t Name:	o' adl	7		Y	
Type:	A Control of the cont		Soil Map Unit	t Name:	o' adl	Seco	ondary Indicate	ors (at least	2 are required)
Type:	A Control of the cont	sufficient)	Soil Map Unit	n soil su	o' adl	Seco		ors (at least	2 are required)
Type:	ators (check or	sufficient) Surfac	Soil Map Unit	n soil su	rface):	Seco	ondary Indicate Water-Stainec Drainage Patte	ors (at least Leaves (B ems (B10)	2 are required)
Type:	ators (check or one indicator is s	sufficient)  Surfac  Inunda	Soil Map Unit	n soil su	orface):	Seco	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R	ors (at least I Leaves (B ems (B10) oheres on L	i 2 are required) 9)  iving Roots (C3) (within in (C4)
Type:	ators (check or one indicator is s	sufficient)  Surfac Inunda Sparse	Soil Map Unit	n soil su	orface):	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp	ors (at least I Leaves (B ems (B10) oheres on L educed Iro il color chan	i 2 are required) 9)  iving Roots (C3) (within in (C4)
Type:	ators (check or ne indicator is s ) (w/in 12") 2")	sufficient)  Surfac  Inunda  Sparse  Marl De	Soil Map Unit	m soil su 6) Aerial Ima	orface):	Second No.	ondary Indicate Water-Stainec Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so	ors (at least Leaves (B ems (B10) pheres on L educed Iro il color chan C5)	2 are required) 9)  Living Roots (C3) (within n (C4) ge w/in 12")
Type:	ators (check or ne indicator is s ) (w/in 12") 2")	Sufficient) Surfac Inunda Sparse Mari Do Hydrog Dry-Se	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coeposits (B15) gen Sulfide Odorason Water Tab	m soil su  6) Aerial Ima  concave S  r (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (	ors (at least Leaves (B lems (B10) pheres on L educed Iro il color chan (C5)	t 2 are required) 9)  Living Roots (C3) (within in (C4) ge w/in 12")
Type:	ators (check or one indicator is so ) (w/in 12") 2")	Sufficient) Surfac Inunda Sparse Marl De Hydrog Dry-Se minera	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Arely Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic)	m soil su  6) Aerial Ima  concave S  r (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita	ors (at least I Leaves (B leams (B10) oberes on L educed Iro il color chan (C5) essed Plan osition (D2) ard (D3)	t 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  ts (D1)
Type:	ators (check or one indicator is so ) (w/in 12") 2")	Sufficient) Surfac Inunda Sparse Marl De Hydrog Dry-Se minera	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coeposits (B15) gen Sulfide Odorason Water Tab	m soil su  6) Aerial Ima  concave S  r (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pi	ors (at least Leaves (B leams (B10)) pheres on L educed Iro il color chan (C5) essed Plan osition (D2) ard (D3) erch H <sub>2</sub> O whi	i 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  its (D1)  in 12")
Type:	ators (check or one indicator is so ) (w/in 12") 2")	Sufficient) Surfac Inunda Sparse Marl De Hydrog Dry-Se minera	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Arely Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic)	m soil su  6) Aerial Ima  concave S  r (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	ors (at least Leaves (B ems (B10) cheres on L educed Iro il color chan C5) essed Plan osition (D2 ard (D3) erch H <sub>2</sub> O w/i hic Relief (I	i 2 are required) 9)  Living Roots (C3) (within in (C4) ge w/in 12")  ts (D1)
Type:	ators (check or one indicator is so ) (w/in 12") 2")	Sufficient)  Surfact Inundation Sparse Marl Do Hydrog Dry-Se minera Other (	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Arely Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic)	m soil su  6) Aerial Ima  concave S  r (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pi	ors (at least Leaves (B ems (B10) cheres on L educed Iro il color chan C5) essed Plan osition (D2 ard (D3) erch H <sub>2</sub> O w/i hic Relief (I	i 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  its (D1)  in 12")
Type:	ators (check or one indicator is so ) (w/in 12") 2")	Sufficient)  Surfact Inundation Sparse Marl Do Hydrog Dry-Se minera Other (	Soil Map Unit  ly, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic) explain)	m soil su 6) Aerial Ima Doncave S or (C1)	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	ors (at least Leaves (B ems (B10) cheres on L educed Iro il color chan C5) essed Plan osition (D2 ard (D3) erch H <sub>2</sub> O w/i hic Relief (I	i 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  its (D1)  in 12")
Type:	ators (check or one indicator is so (w/in 12") 2") 2) n ground surfact YesYes	Sufficient) Surface Inunda Sparse Marl Do Hydrog Dry-Se mineral Other (	Soil Map Unit  by, measure from e Soil Cracks (Bration Visible on Arely Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic) explain)  Depth of water Depth to wa	m soil su  6) Aerial Ima  concave S  r (C1) ble (C2) (v	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	ors (at least Leaves (B ems (B10) cheres on L educed Iro il color chan C5) essed Plan osition (D2 ard (D3) erch H <sub>2</sub> O w/i hic Relief (I	i 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  its (D1)  in 12")
Type:	ators (check or one indicator is so (w/in 12") 2") 2) n ground surfact YesYes	Sufficient) Surface Inunda Sparse Marl Do Hydrog Dry-Se mineral Other (	Soil Map Unit  By, measure from Soil Cracks (Bration Visible on Article (B15) Spen Sulfide Odo Spen Sulfide	m soil su  6) Aerial Ima  concave S  r (C1) ble (C2) (v	rface): gery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	ors (at least Leaves (B ems (B10) cheres on L educed Iro il color chan C5) essed Plan osition (D2 ard (D3) erch H <sub>2</sub> O w/i hic Relief (I	i 2 are required)  9)  Living Roots (C3) (within in (C4) ge w/in 12")  its (D1)  in 12")
Type:	ators (check or one indicator is so (w/in 12") 2") 2) n ground surfact YesYes	Sufficient) Surface Inunda Sparse Marl Do Hydrog Dry-Se mineral Other (	Soil Map Unit  Iy, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic) explain)  Depth of water Depth to water Depth to water Depth to sat.	m soil su  6) Aerial Ima  concave S  r (C1) Ole (C2) (v  er (in.) er (in.) t filled?: (in.)	orface): ogery (B7) urface (B8	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	ors (at least Leaves (B erns (B10) oheres on L educed Iro il color chan (C5) essed Plan osition (D2) and (D3) erch H <sub>2</sub> O wi hic Relief (I	iz 2 are required) 9)  Living Roots (C3) (within in (C4) ge w/in 12")  Its (D1)  D4) (caused by water)
Type:	ators (check or one indicator is some indicator indicator is some indicator indica	Sufficient) Surface Inunda Sparse Marl Do Hydrog Dry-Se minera Other (  De): No	Soil Map Unit  ly, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic) explain)  Depth of water Depth to water to be but not yet but not yet be but not yet	m soil su  6) Aerial Ima  concave S  r (C1) Ole (C2) (v  dr (in.) dr filled?: (in.) Unknow	urface): urface (B8 w/in 12"-24"	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	ors (at least Leaves (B erns (B10) oheres on L educed Iro il color chan (C5) essed Plan osition (D2) and (D3) erch H <sub>2</sub> O wi hic Relief (I	iz 2 are required) 9)  Living Roots (C3) (within in (C4) ge w/in 12")  Its (D1)  D4) (caused by water)
Type:	ators (check or one indicator is some indicator indicator is some indicator indica	Sufficient) Surface Inunda Sparse Marl Do Hydrog Dry-Se minera Other (  De): No	Soil Map Unit  ly, measure from e Soil Cracks (Bration Visible on Araby Vegetated Coreposits (B15) gen Sulfide Odorason Water Table, 12"-40" organic) explain)  Depth of water Depth to water to be but not yet but not yet be but not yet	m soil su  6) Aerial Ima  concave S  r (C1) Ole (C2) (v  dr (in.) dr filled?: (in.) Unknow	urface): urface (B8 w/in 12"-24"	Second No.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	ors (at least Leaves (B erns (B10) oheres on L educed Iro il color chan (C5) essed Plan osition (D2) and (D3) erch H <sub>2</sub> O wi hic Relief (I	iz 2 are required) 9)  Living Roots (C3) (within in (C4) ge w/in 12")  Its (D1)  D4) (caused by water)

## **Marshall Airport and Access Road Improvements**

	Plot Number	HDR510	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type		WD: Wetland Determination	NWI Classification	PSS1/EM1B	Latitude (DD)	61.86563
	Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03417







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: W

MARCHALL ATO DORT											
Project: MARSHALL ATRYOKI Borough/City: Kusi											
Applicant/Owner:	Sampling Point#: <u>\$//</u>										
•	Firm: HDR Alaska, Inc.										
Lat. (dec.°) 61, 865660 Long. 162.033672± 'NAD83 Reco											
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern											
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/											
Photo nos./descriptions: NESW 2:50/ Camera#:											
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain. Wetter HGM type:											
Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal	al Circumstances" present? Yes <u>X</u> No										
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> naturally problematic? In Dry Seaso	n? YesNo If needed, explain answers here.										
SUMMARY OF FINDINGS	Ť										
Hydrophytic Vegetation Present? Yes No Is the sample	ed ama										
Hydric Soil Present? Yes No within a we											
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):										
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover)	. % can total >100%.										
	Dominance Test worksheet:										
<u>Tree Stratum</u> (dbh≥ 3")   Species	nd. Number of Dominant Species										
1. None 5	That are OBL, FACW, or FAC: (A)										
2 6	Total Number of Dominant										
3 7	Species Across All Strata:										
4 8											
Total Tree Cover:	Percent of Dominant Species										
	That are OBL, FACW, or FAC: (A/B)  Prevalence Index worksheet:										
50% of total cover: 20% of total cover:											
Sapling/Shrub Stratum (woody plants < 3" dbh)   Abs.Cov.% Dom? Ind. Abs.Cov.% Dom?	Ind. OD / Multiply by:										
1. Salvara 20 4 FACW 7. Aln. sin.	FAC OBL species X1= 13										
2.5m . M.J. 15 FACH 8.	FACW species X2= X2=										
3. Vac. 01; 260 4 FAL 9.	FAC species 41 X3= 123										
4. Bet. nan. 10 FAC 10.	FACU species X4=										
5. And pol. 7 11	UPL + NL species X5=										
6. Km. 12m. 5 FALW12.	— Column Totals: <u>//8</u> (A) <u>262</u> (B)										
Total Sapling/Shrub Cover:+9											
50% of total cover: 39 20% of total cover: 15,6	Prevalence Index = B/A = 2:22										
Herb Stratum	*										
	Ind.										
1. Fri. Vag. 15 4 FACT 12.	Hydrophytic Vegetation Indicators:										
2. Car. anv. 15 7 OBL 13	Dominance Test is >50%										
3. Cal, can. 10 4 FAC 14	Prevalence Index is ≤3.0										
516	O Manhalasian Adaptati — 1/D— ida										
6 17	Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)										
718	Problematic Hydrophytic Vegetation (Explain)										
8 19											
9 20											
10 21	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.										
11 22	—— be present unless distribed of problematic.										
Total Herb Cover: 40 50% of total cover: 20% of total cover: 8											
	Hydrophytic Vegetation Yes No										
Circular 1/10-ac plot or other plot dimension: % of bare ground:	— Precent?										
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%  (where applicable)	%										
Remarks:											

SOIL Profile Description: (Describe to	the depth needer	Ito document the	indicato	or or confir	m the ahs	ence of indicat	ore)	Sampling Point#: 57/
	Matrix		edox Fea		in the abs	ence of indicat		
(in.) (opt.) Color (mo		Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc²	Toyturo	α,α dip. <u>(pos/</u>	Remarks
0-3 01'	<u> </u>	COIDT (THOISE)	<u>/0</u>	Type	<u>LOU</u>	<u>Texture</u>	neg)	(or use comment number)
3-17 12 11/1/	85 7	7540 J/1	15	-	0.00	Salan	<del>-</del>	
12-20 Oeb -		, , , , , , , , , , , , , , , , , , , ,	2		KLIKE	<u> </u>		
		<u> </u>	_					
	$\overline{w} = \overline{w}$							
		-				./ (		
						1		
<sup>1</sup> Type: C = Concentration, D = De	pletion, RM = Redu	uced Matrix, CS=	- —— -Coated	Sand Gra	ins <sup>2</sup> Locat	ion: PL = Pore	Lining RO	= Root Channel M = Matri
Hydric Soil Indicators (check on								Treotonamio, m matri
Standard Indicators:	\$	Indicators for						
Histosol or Histel (A1)		Deplet	ted Belov	w Dark Su	rface (A11	ı) <u>A</u>	Alaska (	Color Change⁴ (TA4)
Histic Epipedon (A2) (8-16"			ted Matri	x (F3)		A	1	Alpine Swales (TA5)
underlain by mineral soil wit  Black Histic (A3)	n chroma ≤2)	4 1					1	
Hydrogen Sulfide (A4) (with	in 12"of mineral	70		ırface (F6)		. <u>J."</u>	1	Redox with 2.5Y Hue
surface; @" in this pit	III IZ OTTIIIIBIAI	_ <i>I</i> V_Deplet	ed Dark	Surface (F	=7)			red without Hue 5Y or Ier Underlying Layer
1 Thick Dark Surface (A12)		_ <i>M</i> _Redox	Depres	sions (F8)		<u> </u>	ſ	ridyl positive (see pg. 91)
Alaska Gleyed (A13)		M. Red Pa	arent Ma	iterial (F21	)	_ <i>\(\lambda\)</i>	Other (L	ow organic matter, low iron, hig
Alaska Redox (A14)		2 I		ark Surfac	•		pH, red	cently developed., see p.91 of ment; explain in Remarks)
Alaska Gleyed Pores (A15)					. ,	one nrimani in		wetland hydrology, and an
, ,- ,-		appropriate l ⁴Give details	landscap	pe positior	must be p	present unless	disturbed	orproblematic.
Restrictive Layer (if present)		Drainage Cla	ass: 🚺	PD				
Type: Nove	· .	Soil Map Uni	it Name:	2	Hy	dric Soil Pres	ent?	Yes No
Depth (inches):	. <u>1</u>							(
Comments:	*}							
1. 2.							*	
3.							. 16 k	
YDROLOGY							& C	
Wetland Hydrology Indicators (c	heck ones that app	oly, measure fro	m soil s	urface):	Sec	ondary Indicat	ors (at leas	st 2 are required)
Primary Indicators (any one indic	ator is sufficient)				N	Water-Stained	d Leaves (E	39)
Surface Water (A1)		ce Soil Cracks (B				Drainage Patt	ems (B10)	
√ High Water Table (A2) (w/in 1:	2") <u>///</u> Inund	ation Visible on A	Aenallm	agery (B7	7 7			Living Roots (C3) (within 12"
Saturation (A3) (w/in 12")	<u></u>	ely Vegetated C	oncave S	Surface (B	8) 🏏	Presence of R (pos. o,o or so	educed Iro	on (C4)
Water Marks (B1)	<u> </u>	Deposits (B15)			$\mathcal{L}$	Salt Deposits		i <b>go w</b> iiir iz y ,⊹ i≹.
✓ Sediment Deposits (B2)	Hydro	gen Sulfide Odo	or (C1)			Stunted or Str		nts (D1)
	<u> </u>	eason Water Tal	ble (C2) (	(w/in 12"-24	1" <u>M</u>	Geomorphic P	osition (D2	2)
Algal Mat or Crust (B4)	a l	al, 12"-40" organic	)	•		Shallow Aquita	ard (D3)	
•	(explain)			V	(w/in 24", can perch H₂O w/in 12")  ✓ Microtopographic Relief (D4) (caused by water)			
<u> </u>					/	FAC Neutral To		(D4) (caused by water)
Field Observations (in. from ground	d surface):			ال ال	$\neg  op \neq$	TAO NOULIAI I	est (D3)	
Surface Water Present? Yes	No	Depth <b>of</b> wat	ter(in.)	2'- box	vareas			
Water Table Present? Yes	× No	Depth <b>to</b> wat		5	ŀ			
	Seeping in at that							
Saturation Present? Yes	× /	Depth to sat.		7	Wet	land Hydrolog	v Present	? Yes <sup>×</sup> No
(includes capillary fringe)		Epi Endo		wn	7.61	r 1341010 <u>9</u>	, i ieseili	163 NU
Describe Recorded Data (stream g	auge, monitoring w				ions), if av	ailable:		
		•						
Remarks:								
						-		

### **Marshall Airport and Access Road Improvements**

Plo	t Number	HDR511	Wetland Status	Wetland	Vegetation Type	Shrub Birch Willow
Pl	lot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1C	Latitude (DD)	61.86566
P	lot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03367







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

Plot Number	HDR512	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86577
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03352







Photo Type: Hydrology

Direction: N

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: W

Plot Number	HDR513	Wetland Status	Upland	Vegetation Type	Closed Tall Alder Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.86571
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.03333







Photo Type: Soils

Direction: W

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

# **Marshall Airport and Access Road Improvements**

Plot Number	HDR514	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.86431
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.03323

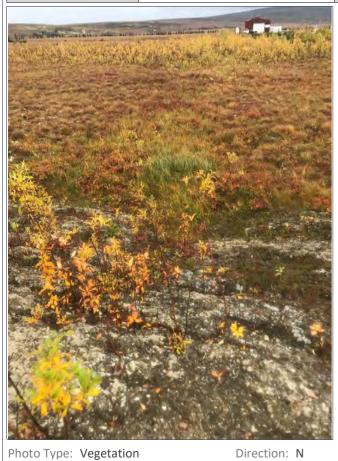




Photo Type: Vegetation Direction: W Photo Type: Direction:

Plot Number	HDR515	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.86438
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03321





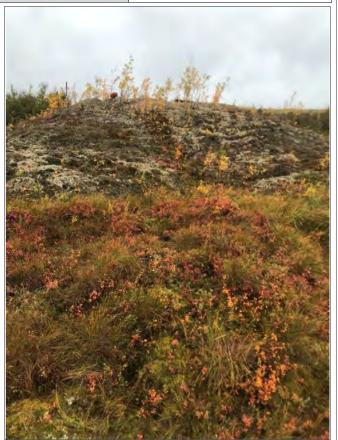


Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: S

### **Marshall Airport and Access Road Improvements**

Plot Number	HDR516	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.86386
Plot Date	9/11/2022	НСМ	N/A	Longitude (DD)	-162.0373







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: W

# **Marshall Airport and Access Road Improvements**

Plot Number	HDR517	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86383
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03741



Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: S Photo Type: Direction:

Plot Number	HDR518	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.86381
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03776



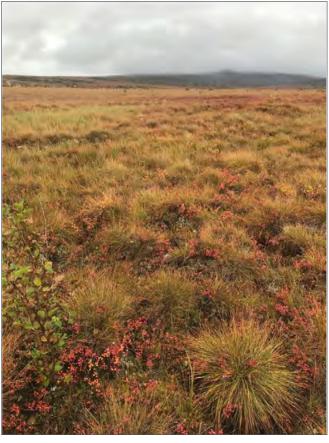




Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR519	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1F	Latitude (DD)	61.86383
Plot Date	9/11/2022	ндм	Slope	Longitude (DD)	-162.03805





Photo Type: Vegetation Direction: SE Photo Type: Direction:

WEILAND DETERMINATION DATA FORM	- Alaska Region
Project: MARSHALL AIRPORT Borough/City: KUS, 74	ak CA Date: 9/11/22
Applicant/Owner: AD C	Sampling Point#: 520
Investigator(s): 2H/BC Firm	HDR Alaska, Inc.
Lat. (dec.°) 61.871 589 Long. 1/62.038534± NAD83 Recorded	on GPS?: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	form: Tessace FP Slope (%): Aspect: N/
Local relief: Shape across slope: (inear/convex/concave Shape up/downslope: (linear/	
Photo nos./descriptions: NESW 2 50 / Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circ	
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season?	
SUMMARY OF FINDINGS	The state of the s
Hydrophytic Vegetation Present? Yes X No	Late A control of the
Hydric Soil Present? Yes No X Is the sampled a within a wetland	
Wetland Hydrology Present? Yes No No	? Yes No _^_ Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % c	an total > 100%.    Dominance Test worksheet:
Tree Stratum (dbh≥3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Nonl. 5.	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
1. Nonl. 5. 5. 6.	
3. 7.	Total Number of Dominant Species Across All Strata:
4. 1882 Silver S	Species Across All Strata:(B)
Will to summer the least of the contract of th	Percent of Dominant Species /
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 3 X1= 3
1. tal, 500. 30 T FAL 7.	FACW species // X2= 22
	FAC species 143 X3= 429
	FACU species X4= O
4. Vac. J1. S FAL 10. S. I1. S. III.	
6	
Total Sapling/Shrub Cover: 58	Column Totals: <u>157</u> (A) <u>454</u> (B)
0.0	200
20 % of total cover. 7170	Prevalence Index = B/A = 2.89
Herb Stratum   Abs. Cov.% Dom? Ind.   Abs. Cov.% Dom? Ind.   Abs. Cov.% Dom? Ind.	
1. Cal. can. 70 4 FAC 12.	
2. Rub. arc. 5 FAL 13.	Hydrophytic Vegetation Indicators:
3. Com. pal, 3 OBL 14.	Dominance Test is >50%
4. Ga lium Trifi / FALW 15.	Prevalence Index is ≤3.0
5. Equ. arv, 15 FAC 16.	Morphological Adaptations (Provide supporting
6. Pot. acii. 5 FAC 17.	data in Remarks or on a separate sheet)
7. Viola sp. 1 _ 18.	Problematic Hydrophytic Vegetation (Explain)
8 19	resistante i yarepriyate vegetation (Explain)
9 20	
10	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22	and a second of problems to
50% of total cover: 20% of	
Circular 1/10-ac plot or other plot dimension: $20 \times 20$ % of bare ground:	Hydrophytic Vegetation Yes No No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks:	A CONTRACTOR OF THE PARTY OF TH

	1-14-1	Sampling Point#:
Profile Description: (Describe to the depth need		m the absence of indicators)
Depth Horizon Soil Matrix	Redox Features	α,α dip.
(in.) (opt.) Color (moist) %	Color (moist) % Type <sup>1</sup>	Loc² Texture (pos/ neg) Remarks (or use comment numb
-5 A 104R3/2 100		- 5160
7-7 B 2,644/2 50	7,54R3/2 SO C,M	MPL SILO N
-18 B2 104R 4/2 95	7,54R 3/3 5 C.	PL SILO N
-20 83 2,59 4/1 86	7.54R 3/3 20 C	MPL SILO N
Application of the second	TOTAL STREET, THE VISION OF	The results of the second of t
THE DELANCE STREET		Mr. War of the strategies
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		ins <sup>2</sup> Location: PL = Pore Lining, RC = Root Channel, M = Ma
lydric Soil Indicators (check ones that apply, national indicators:	Indicators for Problematic Hy	
Histosol or Histel (A1)	Depleted Below Dark Sur	
Histic Epipedon (A2) (8-16" organics, sat'd,	Depleted Matrix (F3)	Alaska Alpine Swales (TA5)
underlain by mineral soil with chroma ≤2)		
Black Histic (A3)  Hydrogen Sulfide (A4) (within 12"of mineral	Redox Dark Surface (F6)	17
surface; @" in this pit	Depleted Dark Surface (F	7) AK Gleyed without Hue 5Y or Redder Underlying Layer
Thick Dark Surface (A12)	Redox Depressions (F8)	α,α-dipyridyl positive (see pg. 91)
Alaska Gleyed (A13)	M Red Parent Material (F21	) Other (Low organic matter, low iron, h
Alaska Redox (A14)	Very Shallow Dark Surface	pH, recently developed., see p.91or ce (F22) Supplement; explain in Remarks)
Alaska Gleyed Pores (A15)	<sup>3</sup> One indicator of hydrophytic v	egetation, one primary indicator of wetland hydrology, and ar
	appropriate landscape position  Give details of color change in	must be present unless disturbed or problematic.
estrictive Layer (if present)	Drainage Class: SPD	
Type: None	Soil Map Unit Name:	Hydric Soil Present? Yes No X
Depth (inches): N/A		
Soil profile moist but not s	mutic. Negative 22 tes	545.
DROLOGY Vetland Hydrology Indicators (check ones that	annly massure from soil surface).	Secondary Indicator (at least 2 are required)
rimary Indicators (any one indicator is sufficient		Secondary Indicators (at least 2 are required)  Water-Stained Leaves (B9)
	rface Soil Cracks (B6)	Drainage Patterns (B10)
	undation Visible on Aerial Imagery (B7	
Saturation (A3) (w/in 12")	parsely Vegetated Concave Surface (B	8) Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
V Water Marks (B1) ✓ Ma	ad Deposits (B15)	Salt Deposits (C5)
Sediment Deposits (B2)	drogen Sulfide Odor (C1)	Stunted or Stressed Plants (D1)
	y-Season Water Table (C2) (w/in 12"-24	4" Geomorphic Position (D2) FP
1	neral, 12"-40" organic) her (explain)	Shallow Aquitard (D3)
	ner(explain)	(w/in 24", can perch H <sub>2</sub> O w/in 12")  Microtopographic Relief (D4) (caused by water)
Imp Deposits (B5)		
V Iron Deposits (B5)	Lat.	FAC Neutral Test (D5)
	Va.	FAC Neutral Test (D5)
eld Observations (in. from ground surface):	Depth of water (in.)	FAC Neutral Test (D5)
ield Observations (in. from ground surface): urface Water Present? Yes No	Depth to water (in.)	FAC Neutral Test (D5)
ield Observations (in. from ground surface): urface Water Present? Yes No	/	FAC Neutral Test (D5)
Field Observations (in. from ground surface): Surface Water Present? Yes No	Depth to water (in.)hat depth but not yet filled?:  Depth to sat. (in.)	Wetland Hydrology Present? Yes X No
ield Observations (in. from ground surface): surface Water Present? Yes No	Depth to water (in.) hat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown	Wetland Hydrology Present? Yes X No
ield Observations (in. from ground surface): urface Water Present? Yes No /ater Table Present? Yes No Seeping in at the sturation Present? Yes No	Depth to water (in.) hat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown	Wetland Hydrology Present? Yes X No
ield Observations (in. from ground surface):  urface Water Present? Yes No  /ater Table Present? Yes No  Seeping in at the stream of the service	Depth to water (in.)hat depth but not yet filled?:  Depth to sat. (in.)  Epi Endo Unknown  ng well, aerial photos, previous inspect	Wetland Hydrology Present? Yes X No

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR520	Wetland Status	Upland	Vegetation Type	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.87159
Plot Date	9/11/2022	ндм	N/A	Longitude (DD)	-162.03853







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: MAKSHALL HIKPORI Borough/City: Kusilva	k CA Date: 9/11/2072
Applicant/Owner: APOT	Sampling Point#: 52)
Investigator(s): 2H/BC Firm: H	IDR Alaska, Inc.
Lat. (dec.°) 61.871363 Long. 142.038276 ± 'NAD83 Recorded o	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/c	
	Veg Type (Viereck Level 4 or other): ##C2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circu	
Are Vegetation , Soil , or Hydrology raturally problematic? In Dry Season? Ye	s No k If needed, explain answers here.
SUMMARY OF FINDINGS	on many the state of the state of the state of
Hydrophytic Vegetation Present? Yes No Is the sampled are:	
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total > 100%.  Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
1. Pic gla. S T PACK 5.	
3. 7. · · · · · · · · · · · · · · · · · ·	Total Number of Dominant Species Across All Strata: (B)
48	The state of the s
and the state of t	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.  1. Pic. Sla. 5 FACW 7. And 00/1 3 FACW	OBL species X1=
2. Bet. ran. 30 Y FAC 8.	FACW species 38 X2= 76
3. Vac. vIII 25 Y FAC 9.	FAC species 77 X3= 23/
4. Sal. av). 5 FACW 10.	FACU species/
5. Pho tom 10 FALW 11.	UPL + NL species X5=
6. CMp, rig. T FAL 12.	Column Totals: <u>  25 (A) 347 (B)</u>
Total Sapling/Shrub Cover: 35	0.00
50% of total cover: 42.5 20% of total cover: 17	Prevalence Index = B/A = 2.78
Herb Stratum  Abo Cov % Dom? Ind	
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind. 1. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	SALE SELECTION OF THE SECOND SECOND
2. Cg. , can. 10 Y FAC 13.	Hydrophytic Vegetation Indicators:
3. Pet, fri, 5 FALW 14.	Dominance Test is >50%
4. Rub. cha. 5 FALW 15.	Prevalence Index is ≤3.0
5. Egu, arv. 5 FAC 16.	Morphological Adaptations (Provide supporting
6	data in Remarks or on a separate sheet)
7 18 19	Problematic Hydrophytic Vegetation (Explain)
9	
1021	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 35	The Branch of the Street of th
50% of total cover:	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	

SUIL December 1									Sampling Point#: 521
Profile Description: (E	Jeschbe to the de	eptn needed	to document the	indicato	rorconfim	nthe abs	ence of indicat	ors)	
Depth Honzon	Soil Matrix		Redox Features q					α,α dip.	
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	_Texture	<u>(pos/</u>	<u>Remarks</u>
0-3 0;								neg)	(or use comment number)
9-10 00		<del></del>							-
TO JOATE =	7,54R3/2	100					SII 0	1 THE .	
2 21 0		/00	against the same of the same o				3100	<u>N</u>	* 1
1000 B	544/2	100 _					2160	109	
								,	
									The second secon
		<u> </u>	3 - 1					*.	*
<sup>1</sup> Type: C = Concentrati	on, D = Depl <b>e</b> tion	n. RM = Redu	ced Matrix, CS=0	Coated:	Sand Grain	ns²l ocati	on PI = Pore	Lining RC	= Root Channel, M = Matrix
Hydric Soil Indicators									- Not Channel, W - Wathx
Standard Indicators:	Tonicononico ina	t apply, mea.						) <u>.                                    </u>	
\ \ /	A4)	i.	Indicators fo		-			1	
Histosol or Histel (			_N_Deplete	ed Belov	v Dark Surl	face (A11	)	🛂 Alaska C	olor Change⁴ (TA4)
Histic Epipedon (A underlain by min	(8-16 organic neral soil with chrom	s,sard, na.≤2)	Deplete	ed Matrix	k (F3)			_ Alaska A	lpine Swales (TA5)
N Black Histic (A3)	90°	<b>-</b> /	IJ Redox I	Dark Su	rface (F6)			√ Alaska R	edox with 2.5Y Hue
Hydrogen Sulfide	(A4) (within 12"of	fmineral			` ,				
surface; @			_N_ Deplete	d Dark	Surface (F	7)	_/\	AN Gleye Redde	ed without Hue 5Y or er Underlying Layer
M Thick Dark Surface	e (A12)		✓ Redox I	Depress	ions (F8)			ž	idyl positive (see pg. 91)
Alaska Gleyed (A1	13)			-	terial (F21)			•	w organic matter, low iron, high
4			•				<del>-/-</del> 2	pH, rec	ently developed., see p.91 of
Alaska Redox (A1	*		Very Sh						nent; explain in Remarks)
Alaska Gleyed Po	res (A15)		<sup>3</sup> One indicato	rofhyd	rophytic ve	getation,	one primary in	dicator of w	etland hydrology, and an
			appropriate la ⁴Give details d	andscap	e position	must be p	resent unless	disturbedo	rproblematic.
Restrictive Layer (if pres	ent)		Drainage Clas			i terriarios.			. 7-1
Type: None	one,		Soil Map Unit		,)	——	d-1- 0-11 D		🗸
	w/AS	-	Son wap onic	wame.		нус	dric Soil Pres	ent?	Yes No
	NA / NATO		3117						
Comments:	L. A.						40	"	
2.	**						1 9		
3.	San								
HYDROLOGY							* -		
Wetland Hydrology Ind	licators (chadk o	nos that ann	h/ magazina fran		<b></b>	0			
Primary Indicators (any			iy, measure ir <b>o</b> n	n Son St	uriace):				2 are required)
		4					Water-Stained		9)
Surface Water (A1)			e Soil Cracks (B6		. *	- /	Drainage Patt		
High Water Table (A	(2) (w/in 12")	<u>//</u> Inunda	ation Visibl <b>e</b> on A	enal Ima	agery (B7)	, , , , , , , , , , , , , , , , , , , ,			iving Roots (C3) (within 12")
Saturation (A3) (w/ir	า 12")	_ <u> </u>	ely Veg <b>e</b> tated Co	ncave S	Surface (B8	s) All	Presence of R		
Water Marks (B1)		Marl De	eposits (B15)			N)	pos. α,α orso) Salt Deposits (	16-	Je w/iii iz )
Nediment Deposits	(B2)		en Sulfide Odor	(C1)		£	Stunted or Str		le (D1)
$\overline{\mathcal{N}}$	()	4	ason Water Tab		w/in 12" 24"				-Slope break
Drift Deposits (B3)			l, 12"-40" organic)	10 (OZ) (	W/III 12 -24		Shallow Aquita		, v.o., v,
Mat or Crust (E	34)	<u></u>	explain)				(w/in 24", can p		n 12")
Non Deposits (B5)		145, s				1/			04)(caused by water)
		. 1.				- /	FAC Neutral To		
Field Observations (in. fr	om ground surfa	ce):	ies.	<del></del>		7	~	()	
Surface Water Present?	· · · · · · · · · · · · · · · · ·	No X	Depth <b>of</b> wate	er (in.)					*
Water Table Present?	Yes ×	No	Depth to wate		18				
	7				. 1				
Onto all D		. 49	lepth but not yet	-	7				V
Saturation Present?	Yes	No	Depth to sat. (		7	Wetl	and Hydrolog	y Present?	Yes No
(includes capillary fringe)		· · · · · · · · · · · · · · · · · · ·	Epi Endo						·
Describe Recorded Data	(stream gauge, i	monitoring we	ell, aerial photos,	, previou	ıs inspectio	ons), if ava	ailabl <b>e</b> :		
Remarks:	B. E	*			. 1 3			·	
Low area w/por	nded water	located	rust out	SIAL	I plot	*	• .		
wike.		I A MALL A	J		V *				
F									

### **Marshall Airport and Access Road Improvements**

Plot Number	Number HDR521 Wetland Status Wetland		Vegetation Type	Open Mixed Shrub Sedge Tundra	
Plot Type WD: Wetland Determination		NWI Classification	PSS1/EM1B	Latitude (DD)	61.87136
Plot Date	Plot Date 9/11/2022		Slope	Longitude (DD)	-162.03828







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Plot Number	HDR522 Wetland Status Upland		Vegetation Type	Bare Ground (Disturbed)	
Plot Type FVP: Field Verification Point		NWI Classification	U	Latitude (DD)	61.87131
Plot Date	<b>Plot Date</b> 9/11/2022		N/A	Longitude (DD)	-162.03851



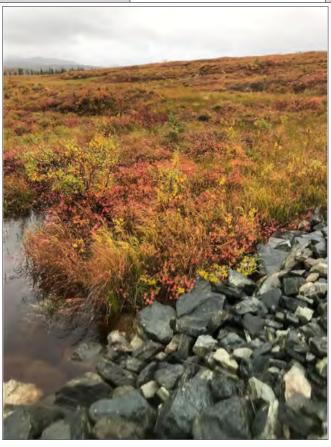




Photo Type: Hydrology

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: SE

	ILAND DETERMINATIO		•	1 .
Project: Marshall Hrps +	Borough	/City: Kusil vak	CA	_ Date: 9/12/2022
Applicant/Owner: ADOT		reg		_ Sampling Point#: 5≥3
Investigator(s): 2H/BC		Firm: HD	R Alaska, Inc.	
			The state of the s	d on map? Field Map #:
Subregion (circle one): SE Southcentral				
Local relief: Shape across slope: (linear/cor				
Photo nos./descriptions: NESW 3	1			evel 4 or other): IIBZa
Are climatic / hydrologic conditions on the sit				andrea .
Are Vegetation $\mathcal{N}$ , Soil $\mathcal{N}$ , or Hydrology				
Are Vegetation $\underline{\mathcal{N}}$ , Soil $\underline{\mathcal{N}}$ , or Hydrology	A / naturally archiemetic	Are Normal Circum	istances present?	res NO
		in Diy Season? Tes	No II nee	ded, explain answers nere.
SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes	No			
Hydric Soil Present? Yes		is the sampled area	٠.	
		within a wetland?	Yes X No	
Wetland Hydrology Present? Yes	No		Remarks (e.g., ma	arginal?):
VEGETATION (Use scientific names.) Estin	mate absolute % cover (not			
Tree Stratum (dbh≥ 3")			Dominance Test wo	orksneet:
Species Cov.% Dom? Ind.	Species Cov.		Number of Dominant	
1. None	5		That are OBL, FACV	V, orFAC:(A)
2	6		Total Number of Don	
3	7		Species Across All S	(B)
	·			
Total Tree	Cover:		Percent of Dominant That are OBL, FACV	
50% of total cover:	20% of total cover	· ·	Prevalence Index v	
Sapling/Shrub Stratum (woody plants < 3" d	lbh)		Total % Cov	er of: Multiply by:
Abs.Cov.% Dom? Ind.		.% Dom? Ind.	OBL species	15 x1= 15
	7	. 1		
2.5a), sco, 10 FAC	8		FACW species	
3.501. beb. 10 FAC	9		FAC species	x3= <u>/56</u>
4. Rines lay / FACH			FACU species	X4= 47
	11	l l	UPL + NL species _	
		- ·   ·	Column Totals:/	○ ★ (A) <u> </u>
Total Sapling/Shrub		172		0 %
	20% of total cover	:_/2,2_	Prevalence Index	(=B/A = 2,36
Herb Stratum  Abs.Cov.% Dom? Ind.	Aha Oau	0/ D0 l1		
1 0 1	Abs. Cov.			
	13		Hydrophytic Vegeta	ation Indicators:
	14		Dominance T	
	15		Prevalence Ir	ndex is ≤3.0
5	16		Morphologica	Adaptations <sup>1</sup> (Provide supporting
	17			arks or on a separate sheet)
	18		Problematic ⊦	lydrophytic Vegetation¹ (Explain)
8	19			
	20 <u> </u>		Indicators of hydric	soil and wetland hydrology must
	21 22.			sturbed or problematic.
Total Herb (				-
50% of total cover: 23.5		9,4	Uhadaa a ta dia	
Circular 1/10-ac plot 🔀 or other plot dimer			Hydrophytic Vegetation	res No
% Cover of Wetland Bryophytes		regiound	Present?	
(where applicable)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Remarks:				

SOIL			- 41	Chara Tarkers		Bullion auf 14		Olean Park	PHARMOZA	Sampling Point#: 523	
Profile D	escription	: (Describe to the de	epth nee				n the abs	ence of indicat	ors)	P. As of Co.	
Depth	Horizon	Soil Matrix		F	Redox Fea	atures			α,α dip.	The state of the second	
(in.)	(opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	(pos/ neg)	Remarks (or use comment number)	
2-7	AIB	5Y 3/1	90	7.54R 414	10	C	PL,RC	SALO			
11-20	B	2,543/2	80	7.54R3/3	20	C	PL	VFSALO	+		
		On the second			NAME OF TAXABLE PARTY.		- W. W. Z.				
	-			The state of		0.30000				Pr 1 1997	
¹Type: C	= Concen	tration, D = Depletion	 n, RM = F	Reduced Matrix, CS	=Coated	Sand Grai	ns <sup>2</sup> Locat	ion: PL = Pore	Lining, RC	= Root Channel, M = Matrix	
Hydric S	oil Indicat	ors (check ones tha	t apply, ı	measure from top o	of minera	l layers u	nless oth	erwise noted)		S COMMITTEE STATE OF THE PARTY	
Standard	d Indicator	s:		Indicators	for Probl	ematic Hy	dric Soil	s³:	,	The second second second	
A LONG THE RESERVE	tosol or His			_/\/_ Deple	ted Belov	w Dark Sur	face (A11	) 1	_ Alaska C	Color Change (TA4)	
		on (A2) (8-16" organic mineral soil with chrom		_/\/_ Deple	ted Matri	x (F3)		1	Alaska A	Alpine Swales (TA5)	
N Bla	ck Histic (A	3)			x Dark Su	rface (F6)		1	/ Alaska F	Redox with 2.5Y Hue	
		fide (A4) (within 12"of " in this pit	fmineral	_	ted Dark	Surface (F	7)	A	AK Gley	ed without Hue 5Y or er Underlying Layer	
. 1		rface (A12)		N Redox	x Depress	sions (F8)		N		ridyl positive (see pg. 91)	
✓ Ala	ska Gleyed	i (A13)		<u> </u>	arent Ma	terial (F21	)	1	Other (Lo	ow organic matter, low iron, high ently developed., see p.91 of	
X Ala	ska Redox	(A14)		√ Very S	Shallow D	ark Surfac	e (F22)		Supple	ment; explain in Remarks)	
<u> </u> Ala	ska Gleyed	d Pores (A15)	10 E	<sup>3</sup> One indicate appropriate <sup>4</sup> Give details	landscap	e position	must be p	resent unless	dicator of v disturbed o	vetland hydrology, and an or problematic.	
Restrictiv	e Layer (if	present)	N Y	Drainage Cl	ass: Pi	7					
Type:	No	ne		Soil Map Un	nit Name:	A CONTRACT	Hyd	dric Soil Pres	ent?	Yes_X_ No	
Depth	(inches):	IVIA					EV.	147		E 1 3 1	
Comment 1. 2. 3.	12/	252						146		1. 1. A	
HYDROL	OGY	-eta-	arti								
Wetland	Hydrology	Indicators (check o	nes that	apply, measure fro	om soil si	urface):	Sec	ondary Indicate	ors (at leas	t 2 are required)	
		(any one indicator is	sufficien	<u>t)</u>			N	Water-Stained	Leaves (B	9)	
7.	ace Water (	A Part of the second se	100000000000000000000000000000000000000	urface Soil Cracks (E		Sufferior o	1	Drainage Patterns (B10)			
1		le (A2) (w/in 12")		undation Visible on			- 7,	Oxid'd Rhizospheres on Living Roots (C3) (within 12")  Presence of Reduced Iron (C4) (pos. α,α or soil color charge w/in 12")			
11	ration (A3) er Marks (B		A 1	parsely Vegetated C	Concave S	Surface (B	7				
	ment Depo		A 1	arl Deposits (B15) rdrogen Sulfide Odd	or(C1)		1	Salt Deposits ( Stunted or Stre		ute (D1)	
1	Deposits (B		N Dr	y-Season Water Ta	ble (C2) (	w/in 12"-24				) - Flood plan	
1.	Mat or Cru		- Comme	ineral, 12"-40" organio her (explain)	:)		N	Shallow Aquita (w/in 24", can po		in 12")	
1	Deposits (B			, in the second second				Microtopograp	hic Relief (	D4) (caused by water)	
Field Obse	ervations (i	n. from ground surfa	ce):				7	FAC Neutral Te	53L (D3)		
	Vater Prese		No _	Depth of wa	ter (in.)	-6" in le	wareas	5			
WaterTab	ble Present		No _	Depth to wa	ter (in.) _	1"_					
Saturation	n Present?	Yes X	No				Wet	and Hydrolog	v Present	? Yes X No	
(includes	capillary frir	723		Epi Endo					1000		
Describe F	Recorded D	Data (stream gauge,	monitorir	ng well, aerial photo	s, previou	us inspecti	ons), if av	ailable:	4 15 III.		
Remarks:				1	11		1				
Surface	H20 P	resent in si	everal	low spots	thro	ugh os	4.		Jor max	suy b/E low areas	
Some de	rift deps	sits on low a	rea lie	ne Lation Dra	mage	patteri	15 - 50	Hace wa	Her mic	, , , ,	

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR523	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	Plot Type WD: Wetland Determination NWI Plot Date 9/12/2022		PSS1/EM1C	Latitude (DD)	61.87124
Plot Date			Riverine	Longitude (DD)	-162.03917







Direction: W

Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation

Plot Number	HDR524	Wetland Status Upland		Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87127
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.03904







Photo Type: Hydrology

Direction: NW

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: SE

Plot Number	HDR525 Wetland Status Upland Vegetation				Open Tall Willow Shrub
Plot Type FVP: Field Verification Point		NWI Classification	U	Latitude (DD)	61.87143
Plot Date	Plot Date 9/12/2022		N/A	Longitude (DD)	-162.03874







Photo Type: Vegetation

Direction: NW

Photo Type: Vegetation

Direction: SE

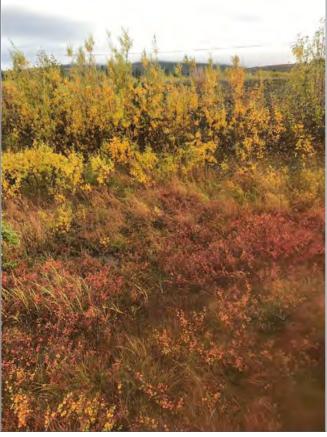
Photo Type: Vegetation

Direction: SW

### **Marshall Airport and Access Road Improvements**

	Plot Number	HDR526 Wetland Status Wetland		Vegetation Type	Open Mixed Shrub Sedge Tundra	
	Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.8711
Plot Date		9/12/2022	НСМ	Slope	Longitude (DD)	-162.03897





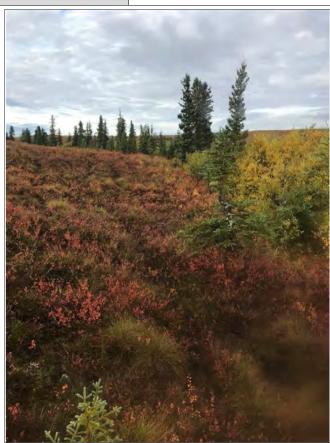


Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM -	Alaska Region			
Project: Marshall Airport Borough/City: Kusilva		9/12/2022		
Applicant/Owner. ADo T		Point#: <u>527</u>		
	IDR Alaska, Inc.			
Lat. (dec.°) 61, 821578 Lung. 162.039974 ± 'NAD83 Recorded o				
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo				
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/c				
Photo nos./descriptions: NESW 2-Soil 1-hyllo Camera#:				
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:				
Are Vegetation $\mathcal{N}$ , Soil $\mathcal{N}$ , or Hydrology $\mathcal{N}$ significantly disturbed? Are "Normal Circu				
Are Vegetation M, Soil M, or Hydrology M naturally problematic? In Dry Season? Ye	s No _X_ If needed, explai	n answers here.		
SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No	***************************************			
Is the sampled are				
within a wettand:	· <del>- /</del>			
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):			
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	total >100%.  Dominance Test worksheet:			
<u>Tree Stratum</u> (dbh≥ 3")	,			
Species         Cov.% Dom? Ind.         Species         Cov.% Dom? Ind.           1. № №	Number of Dominant Species That are OBL, FACW, or FAC:	(A)		
2 6	Total Number of Dominant	Ø.		
3	Species Across All Strata:	(B)		
4 8	_			
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC:	100 (A/B)		
50% of total cover: 20% of total cover:	Prevalence Index worksheet:	4 t 15		
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:	Multiply by:		
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. $1.5 \cdot 1.5 \cdot $	OBL species	X1= <u>15</u>		
1. <u>Sal. puli 60 y FRCV7.</u> 2 8	FACW species	x2= <u>120</u>		
3	FAC species 70	x3= <u>210</u>		
410	FACU species	X4=		
5 11	UPL + NL species X5=			
0	Column Totals: <u>145</u> (A)	<u>345</u> (B)		
Total Sapling/Shrub Cover: 60				
50% of total cover: 30 20% of total cover: 12	Prevalence Index = B/A = 2.38			
Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.				
1. Com. pal. 15 OBC 12.	Hydrophytic Vegetation Indica			
2. Rub. arc. 10 FAC 13	· · · · ·			
3. Cal. can. 50 Y FAC 14.	Dominance Test is >50%  ✓ Prevalence Index is ≤3.0			
4. <u>Equ. ard.</u> 10 <u>FAC</u> 15				
5.	/_ Morphological Adaptatio data in Remarks or on a	ns¹ (Provide supporting		
7 18	1	,		
8	Problematic Hydrophytic	Vegetation (Explain)		
9 20				
10 21	<sup>1</sup> Indicators of hydric soil and we			
11 22	be present unless disturbed or p	nonemanc.		
Total Herb Cover: <u>95</u> 50% of total cover: 42.5 20% of total cover: 14				
	Hydrophytic Yes	No		
Circular 1/10-ac plot or other plot dimension: 20120 % of bare ground: % Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?			
(where applicable)				
Remarks:		•		

SOIL			<u>.                                    </u>			- 1.1 1				Sampling Point#: 527	
Profile D	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)										
Depth	Horizon	Soil Matrix	<del></del>	Re	edox Fea	tures		* *	α,α dip.		
<u>(in.)</u>	<u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	(pos/	Remarks (arms a see a se	
0-2	0i_								neg)	(or use comment number)	
2-4	<u>0 e</u>							`	***************************************		
4-8	2,	2.54 4/1	85 5	TRYLY	15		MRC	SILO	and the same		
8-22		544/1	<u>70 5</u>	412414	15	C	h.P. R.C	SILO			
				5423/4	15						
										= Root Channel, M = Matrix	
		rs (check ones tha	apply, <b>me</b> a						):		
,	d Indicators	· <del>-</del>		Indicators fo			-		ź		
	tosol or Hist			_/V_ Deplete	ed Belov	w Dark Su	rface (A1	1) <u>/</u>	🧘 Alaska C	Color Change <sup>4</sup> (TA4)	
		n (A2) (8-16" organic mineral soil with chrom		Deplete	ed Matrix	k (F3)		+	🖊 Alaska A	Ipine Swales (TA5)	
_ <u>N</u> Bla	ck Histic (A3	3)		_∕V_Redox	Dark Su	rface (F6)	)	$\Delta$	👤 Alaska R	Redox with 2.5Y Hue	
		de (A4) (within 12"of	mineral	√ Deplete	ed Dark	Surface (F	F7)	<u> </u>		ed without Hue 5Y or	
1 1	race; @ ck Dark Sur	" in this pit				ions (F8)	•	Λ	á .	er Underlying Layer	
1		` '		1						ndyl positive (see pg. 91)	
1 1	ska Gleyed			· · · · · · · · · · · · · · · · · · ·		terial (F21	•		pH, rec	ow organic matter, low iron, high ently developed., see p.91 of	
1 / 1	ska Redox (	,		•		ark Surfac				ment; explain in Remarks)	
<u></u> Ala:	ska Gleyed	Pores (A15)		*One indicate	or of hyd:	rophytic v	egetation	, one primary ir present unless	dicator of w	vetland hydrology, and an	
				⁴Give details	of color	change ir	Remarks	present uniess 3.	aistaibeat	n problematic.	
Restrictiv	e Layer (if p	resent)		Drainage Cla	ss: 🤇 🖟	7 D				<b>\</b>	
Type:	Nov			Soil Map Unit	Name:		Ну	dric Soil Pres	ent?	Yes No	
Depth	(inches): _	N/A									
Comment	ts:										
1.											
3.											
HYDROL	OGY										
		Indicators (check o		oly, <b>me</b> a <b>sure fro</b> r	n soil sı	urface):	Sec	ondary Indicat	ors (at leas	t 2 are required)	
		any one indicator is	sufficient)				N	Water-Stained Leaves (B9)			
	ce Water (A	•		ce Soil Cracks (B	•		4	Drainage Patt			
		e (A2) (w/in 12")	4 .	ation Visible on A			7			iving Roots (C3) (within 12")	
7	ration (A3) (	•	<u>/</u> Spars	ely Vegetated Co	ncave S	Surface (B		Presence of R (pos. α,α or se	oil color chan	n (C4) ge w/in 12")	
	r Marks (B1			Deposits (B15)			<u> </u>	Salt Deposits	(C5)		
<u>/</u> Sedir	ment Depos	its (B2)		gen Sulfide Odoi				Stunted or Str	essed Plan	ts (D1)	
N Drift D	Deposits (B3	3)		eason Water Tab al, 12"-40" organic)	le (C2) (	w/in 12"-24	4"	Geomorphic F		) <u>j</u>	
⊥ Algal	Mat or Crus	t (B4)	n 1	(explain)			<u> 7</u> V	Shallow Aquit (w/in 24", can p		in 12") /	
N Iron E	Deposits (B5	5)	,				7	•		D4) (caused by water)	
	•		\$ ×				Ly	FAC Neutral T	est (D5)		
Field Obse	ervations (in	. from ground surfac	:e):								
	/ater Presei	· · · · · ·	No X	Depth of wate							
Water Tab	ole Present?	Yes_X_	No	Depth to wate	er (in.)	17_					
			ng in at that	depth but not yet	filled?:	15					
Saturation		Yes_X_	No	Depth <b>to</b> sat.	(in.)/_	/	Wet	da <b>nd Hydrolo</b> g	y Present	? Yes <u>\ No</u>	
	capillary fring				Unkno						
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:	Remarks: No surface water but algal mats observed in low spots and on downed vegetation,										
No sur	face wa	ter but alga	I mays ?	obshuld ax	low !	spots.	and or	n downed	11860 to	High,	
						•		-	1	· •	

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR527	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1C	Latitude (DD)	61.87158
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.03997







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: W

Plot Number	HDR528	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87214
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.04137







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR529	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87264
Plot Date	9/12/2022	НСМ	Riverine	Longitude (DD)	-162.04241







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: S

WETLAND DETERMINATION DATA FORM -	Alaska Region	
Project: Marshall Airport Borough/City: Kusilya	K CA Date	9/12/2022
Applicant/Owner: ADOT	Sam	npling Point#: <u>536</u>
Investigator(s): 7H/BC Firm: H	DR Alaska, Inc.	
Lat. (dec.°) 61.872845 Long. 162.042964 ± 'NAD83 Recorded o	n GPS?: X Marked on ma	ap? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landfo	rm: Terrace/FP Slope	e(%): <u> </u>
Local relief: Shape across slope: /lipear/convex/concave Shape up/downslope: linear/convex/concave		
Photo nos./descriptions: NESW - 250 (Camera#:		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wester HGI	M type: N/A
Are Vegetation $\overline{\mathcal{N}}$ , Soil $\overline{\mathcal{N}}$ , or Hydrology $\overline{\mathcal{N}}$ significantly disturbed? Are "Normal Circu		
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season? Ye		
SUMMARY OF FINDINGS		•
Hydrophytic Vegetation Present? Yes X No		
Hydric Soil Present?  Yes No Is the sampled are within a wetland?		
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal)	?):
		. ,
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	Total > 100%.  Dominance Test workshe	et:
Tree Stratum (dbh≥ 3")		0
Species         Cov.%         Dom?         Ind.         Species         Cov.%         Dom?         Ind.           1.	Number of Dominant Speci That are OBL, FACW, or FA	es AC: (A)
26	Total Number of Dominant	
3 7	Species Across All Strata:	(B)
4 8		(-)
Total Tree Cover:	Percent of Dominant Speci	es 1
	That are OBL, FACW, or FA	AC: <u>10 (</u> A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksh	e <b>et:</b>
Sapling/Shrub Stratum (woody plants < 3"dbh)	Total % Cover of:	Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species	X1=
1. Sal. belo. 15 FAC 7	FACW species	x2= 82
3. Ros. aci. 20 Y FACU 9.	FAC species 73	x3= 219
4. Vib. edu. 10 FACU10.	FACU species 35	X4=140
5,11	UPL + NL species	X5= ****
612	Column Totals: 149	(A) 44/ (B)
Total Sapling/Shrub Cover: 85		(')(D)
50% of total cover: 42.5 20% of total cover:	Prevalence Index = B/A	- 2.910
Herb-Stratum	rievalence muex - b/A	- / 1 02
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.		
1. Equiary. 30 4 FAC 12.	Hydrophytic Vegetation in	diastora
2. <u>Cas. can.</u> 20 4 FAC 13		
3. Ruh, arc. 5 FAC 14	Dominance Test is >	
4. Gal. Ivilid.   FACW 15	Trevalence index is	50.0
5. Pol. acr. 3 Fac 16.	Morphological Adap	tations <sup>1</sup> (Provide supporting
6. <u>Cha, ang.</u> <u>5</u> <u>FACU</u> 17		r on a separate sheet)
7	Problematic Hydropl	hytic Vegetation¹ (Explain)
9		
10 21	1 Indicators of hydric soil and	d wetland hydrology must
22	be present unless disturbed	
Total Herb Cover:		***************************************
50% of total cover: 32 20% of total cover: 12.8	Hydrophytic	\ <i>r</i>
Circular 1/10-ac plot or other plot dimension: 15×15 % of bare ground:	Vegetation Yes	<u>X.</u> No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?	
(where applicable)		
Remarks:		

Profile De	escription:	(Describe to the de	epth needed t	o document the	indicato	rorconfin	m the ab	sence of indicat	ors)	Sampling Point#. 170
Depth	Horizon	Soil Matrix		Re	dox Fea	tures			α,α dip.	A Description
(in.)	(opt.)	Color (moist)	% (	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc²	Texture	(pos/	<u>Remarks</u>
0-2	0,						***************************************		<u>neg)</u>	(or use comment number)
2-5	A	10427/2	100	***************************************			***************************************	SILO		
5-11	Bi	7.54 4/1		54R3/3	10	<u>C.</u>	M.PL	. 5100	40	
11-22	B <sub>2</sub>	2.54 4/1	80 7,	54R 3/3	20	C	MPL	SILO		
										-
				Li Lawa a Pina in a F						
				, ter di segle, e	-		w.*.			
<sup>1</sup> Type: C	= Concentr	ation, D = Depletion	n, RM = Reduc	ced Matrix, CS=0	Coated	Sand Gra	ins <sup>2</sup> Loca	ition: PL = Pore	Lining, RC	= Root Channel, M = Matrix
Hydric Sc	oil Indicato	rs (check ones tha	t apply, <b>m</b> ea <b>s</b>	ure from top of	minera	l la <b>yers</b> u	nless ot	herwise noted)	:	
,	Indicators			Indicators fo	r Probl	ematic Hy	ydric Soi	ls³:		
7	osol or Histe	, ,		Deplete	ed Belov	v Dark Su	rface (A1	1) <u>N</u>	Alaska C	color Change <sup>4</sup> (TA4)
		n (A2) (8-16" organic mineral soil with chrom		Deplete	ed Matrix	(F3)		- Annual	_ Alaska A	lpine Swales (TA5)
l i	k Histic (A3		,	Redox I	Dark Su	rface (F6)		mp. advista	_ Alaska F	ledox with 2.5Y Hue
		de (A4) (within 12"of	fmineral	8		Surface (F		Str. Augus, agg	AK Gley	ed without Hue 5Y or
		" in this pit		and the same of th		•	',	delinets ago.	Redd	er Underlying Layer
	k Dark Surf	• •			•	ions (F8)				idyl positive (see pg. 91)
	ka Gleyed (	•				terial (F21	•		Otner (Lo pH, rec	ow organic matter, low iron, high ently developed., see p.91 of
1	ka Redox (/	·		_		ark Surfac			Supple	ment; explain in Remarks)
Alas	ka Gleyed I	Pores (A15)		<sup>3</sup> One indicato	r of hyd	rophytic v	egetation	n, on e primary in present unless	dicator of v	vetland hydrology, and an
			•	⁴Give details					aistai bea c	n problematic. ಕಟ್ಟಿಸಿಸಿಕ
Restrictive	Layer (if pr	resent)		Drainage Clas	ss: S(	20			***************************************	
Type:	None			Soil Map Unit	Name:		H	ydric Soil Pres	ent?	Yes No
Depth	(inches):	NA								·
Comments	s:									
1. 2. \		1 A - A	1 ^	1/ /	ø	1 < 1				38y .
3. X10 P	1 may	Myllos Indical	for the b	voblematic	<u>. 551</u>	IND	Scoto	75, <u> </u>		· 100 100 100 100 100 100 100 100 100 10
HYDROL	)GY									
		ndicators (check o		y, <b>m</b> ea <b>s ur</b> e <b>fro</b> n	n soil sı	urface):				t 2 are required)
		any one indicator is		, , , , , ,			N	_Water-Stained		
	ce Water (A	15		e Soil Cracks (B6	•		. +	_ Drainage Patte		
***		(A2) (w/in 12")		tion Visible on A			1	Oxid'd Rhizosp. Presence of R		iving Roots (C3) (within 12")
	ation (A3) (v	•		ly Vegetated Co	ncave S	Surface (B	8)	_ (pos. α,α or so		
	r Marks (B1)		12,42,74	eposits (B15)			-	_Salt Deposits (		•
Sedim	nent Deposi	its (B2)		en Sulfide Odor	` '		_\_	∠Stunted or Stre		
Drift D	eposits (B3	3)		ason WaterTab , 12"-40" organic)		w/in 12"-24	1" \(\frac{1}{2}\)	_GeomorphicP _ShallowAquita	•	) PP
Algal I	Mator Crus	t (B4)	Other (	explain)			_/\/	_ (w/in 24", can p	erch H <sub>2</sub> O w/	in 12")
Iron D	eposits (B5	)					N	Microtopograp	hic Relief (	D4) (caused by water)
						····		FAC Neutral Te	est (D5)	
	-	. from ground surfa			<i>a</i>		,			
*	ater Preser		7.	Depth of water						
Water lab	le Present?		No 💢	Depth to water						
0-4	D 10		_	epth but not yet						
Saturation		Yes	No _	Depth <b>to</b> sat.			We	tland Hydrolog	y Present	? Yes No
	apillary fring Recorded Da	ge) ata (stream gauge, i	monitorina we	Epi Endo			ions) if a	vailable.		
		.,		, pilotos	,	peot		- and 5101		
Remarks:			<del></del>							
Ala Man	anh.	la out	1. Aug «	Seeswas	5001	whar	alase	wel		

Plot Number	HDR530	Wetland Status	Upland	Vegetation Type	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.87285
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04296







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: W

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR531	Wetland Status	RPW	Vegetation Type	Open Water
Plot Type	SC: Stream Crossing	NWI Classification	R3UBH	Latitude (DD)	61.87306
Plot Date	9/12/2022	ндм	Riverine Channel	Longitude (DD)	-162.04327







Photo Type: Hydrology

Direction: NE

Photo Type: Hydrology

Direction: NW

Photo Type: Hydrology

Direction: SW

WEILAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: Kusilva	k CA Date: 9/12/2022
Applicant/Owner: ADOT	Sampling Point#: 532
	IDR Alaska, Inc.
Lat. (dec. °) (1.971 728 Long. 162.039227± 'NAD83 Recorded c	on GPS?: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Terracuffied Slope (%): 2 Aspect: 10/
Local relief: Shape across slope: (linear) convex / concave Shape up/downslope: (linear) convex / concave	convex / concave NWI classification: KSI IPM I
Photo nos./descriptions: NEXW 2-SWI Camera#:	Veg Type (Vierack Level 4 prother): 77 2 74
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X	
Are Vegetation M, Soil M, or Hydrology Significantly disturbed? Are "Normal Circu	
Are Vegetation $\overline{\mathcal{N}}$ , Soil $\overline{\mathcal{N}}$ , or Hydrology $\overline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	
SUMMARY OF FINDINGS	in record, explainanswels here.
Hydrophytic Vegetation Present? Yes \( \text{No} \)	
Is the sampled are	
	· · · · · · · · · · · · · · · · · · ·
Wetland Hydrology Present? Yes No	Remárks (e.g., marginal?):
<b>VEGETATION</b> (Use scientific names.) Estimate absolute % cover (not relative cover). % call	n total >100%. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	Dominance restworksneet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. <u>Alone</u> 5	That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8	
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: (A/B)  Prevalence Index worksheet:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind.  1. Sal. Pul. 50 FAKW 7.	OBL species <u>23</u> X1= <u>23</u>
	FACW species
	FAC species
3	FACU species X4=
511	UPL + NL species X5=
6. 3- 12.	1-1- 2/0
Total Sapling/Shrub Cover: 55	Column Totals: <u>155</u> (A) <u>3(39</u> (B)
	2 2 2
	Prevalence Index = B/A = 2.38
Herb Stratum   Abs.Cov.% Dom? Ind.   Abs.Cov.% Dom? Ind.	
Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind. 1. Cal. can. (60 Y FAC 12.	,
2. Com. pal, 20 Y 0BL 13.	Hydrophytic Vegetation Indicators:
3. Car. agu, 3 0BC 14.	Dominance Test is >50%
4. Rub. art. 7 FAC 15.	Prevalence Index is ≤3.0
5. Egs. crv. 10 FAC 16.	Morphological Adaptations¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7 18	· · · · · · · · · · · · · · · · · · ·
8 19	Problematic Hydrophytic Vegetation (Explain)
9 20	
10	1 Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 100	·
50% of total cover: 20% of total cover: 20	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 15×15 % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks:	
Tomano.	
1	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)  Depth Horizon Soil Matrix Redox Features Globy Remarks (no.) (post)	SOIL			\$P\$ 100000000000000000000000000000000000	Sampling Point#: <u>53</u>	
Color   Color (moist)   %   Color (moist)   %   Travitro   Lock   Texture   Lock   Color (crust comment number)	Profile Description: (Describe to the depth need	led to document the indicator or co	nfirm the absence	e absence of indicators)		
Deplete of the content of the cont	Depth Horizon Soil Matrix	Redox Features				
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Graine *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Graine *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Hydric Soil Indicators:	(in.) (opt.) Color (moist) %	Color (moist) % Type	Loc <sup>2</sup> T	exture		
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains* Location: PL = Pore Lining, RC = Root Channel, M = Matrix Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):  Standard Indicators:  Indicators for Problematic Hydric Soils*  M History Builde (A4) (within 12 of mineral apply, measure from top of mineral layers unless otherwise noted):  Indicators for Problematic Hydric Soils*  M Pepleted Below Dark Surface (A11)  M History Builde (A4) (within 12 of mineral applet Metrix (F3)  M Redox Dark Surface (F6)  M Alaska Alpine Svales (TA4)  M Pepleted Dark Surface (F7)  M AK Gieyed Without Hus SV or Redox Win 12 of Marka Rodow with 12 of Marka Rodo	0-3 00				tor add dominont numbers	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pere Lining, RC = Root Channel, M = Matrix Hydric Soil: 1	3-10 3, 2.594/1 70	7.54R 7/4 15 C	M.PL.R S	100 +		
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Fore Lining, RC = Root Channel, M = Matrix Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:    Histosio of Problematic Hydric Soils *	3, 44.5	7.54R3/3 15 C	MALL _	<u></u>		
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Standard Indicators:	10-22 Br 545/1 70	7,54R4H 30 C	_ <u>mpl S</u>	160 -	,	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Standard Indicators:		<u></u>				
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Standard Indicators:		With the second	· · · · · ·	<u></u>		
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Standard Indicators:						
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Standard Indicators:			<u> </u>			
Indicators for Problematic Hydric Soils*.				···	= Root Channel, M = Matrix	
Misticosol of Histel (A1)				se noted):		
Mistic Epipedon (A2) (8-16 roganics, sard, undershap with chromas 2)		그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그	-			
underlain by mineral soil with chromas 2)    Depleted Matrix (r-3)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Surface (A11)	a d	• • • •	
Mydrogen Sulfide (A4) (within 12°ofmineral surface)   Mydrogen Sulfide (A3)   Mydrogen Sulface (A12)   Mydrogen Sulface (A12)   Mydrogen Sulface (A13)   Mydrogen Sulface (A13)   Mydrogen Sulface (A14)   Mydrogen Sulface (A14)   Mydrogen Sulface (A15)   Mydrogen Sulfac		<u>M</u> Depleted Matrix (F3)		_ <u>/</u> V_Alaska Alı	pine Swales (TA5)	
surface; @* in this pit	Black Histic (A3)	Nedox Dark Surface (	<del>-</del> 6)	Alaska R∈	edox with 2.5Y Hue	
Thick Dark Surface (A12)  Alaska Gieyed (A13)  Alaska Gieyed (A13)  Alaska Redox (A14)  Alaska Gieyed Pores (A15)  Done indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.  **Give details of color change in Remarks.**  Restrictive Layer (if present)  Type:	Hydrogen Sulfide (A4) (within 12"of mineral	A Depleted Dark Surfac	e (F7)			
Alaska Gleyed (A13)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A15)  Alaska Redox (A15)  Alaska Redox (A15)  Alaska Gleyed Pores (A15)  Alaska Gleyed Poresent?  Alaska Gleyed P	1			. 6		
Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Gleyed Pores (A15)  One indicator of hydrobytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Remarks)  Type: Arm   Depth (inches): Drainage Class: April    Type: Arm   Depth (inches): N/A    Comments:					, , , ,	
Alaska Gleyed Pores (A15)   3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic. To dive details of color change in Remarks.   Restrictive Layer (if present)   Drainage Class: \$\frac{1}{2}\$	~*		•	pH, rece	ntly developed., see p.91 of	
appropriate landscape position must be present unless disturbed or problematic. Give details of color change in Remarks.  Restrictive Layer (if present) Type:						
Covered the last of color change in Remarks.   Drainage Class: Spi)   Soil Map Unit Name:   Hydric Soil Present?   Yes	N Alaska Gleyed Pores (A15)	<sup>3</sup> One indicator of hydrophyt	c vegetation, one	primary indicator of we	etland hydrology, and an	
Type:	特別的に   選挙経済的   1987   1987   1987   1987   1987   1987   1987   1987   1987   1987   1987   1987   1987   1987   19			nt unless distuibed of	problematic.	
Depth (inches):	Restrictive Layer (if present)	Drainage Class: SAD				
Comments: 1. 2. 3.  HYDROLOGY  Wettand Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) M Surface Water (A1) M Surface Soil Cracks (B6) M High Water Table (A2) (w/in 12") M Sparsely Vegetated Concave Surface (B8) M Sediment Deposits (B1) M Hydrogen Sulfide Odor (C1) M Drift Deposits (B3) M Algal Mator Crust (B4) M Iron Deposits (B5) M Iron Deposits (		Soil Map Unit Name:	Hydric S	Soil Present?	Yes No	
### Process of the property of the process of the property of the process of the process of the property of the process of the	Depth (inches): N/A					
2. 3.  HYDROLOGY  Wetand Hydrology Indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  New Indicators (at least 2 are required)  Notice Indicators (at	l _ · · · · · · · · · · · · · · · · · ·					
Surface Water (A1)   Mount of the Mount of	I 144 1					
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):       Secondary Indicators (at least 2 are required)         Primary Indicators (any one indicator is sufficient)       M       Surface Soil Cracks (B6)       M       Water-Stained Leaves (B9)       M       Drainage Patterns (B10)       Drainage	l .					
Primary Indicators (any one indicator is sufficient)  Surface Water (A1)  High Water Table (A2) (w/in 12")  Saturation (A3) (w/in 12")  Water Marks (B1)  Difft Deposits (B3)  Nalgal Mator Crust (B4)  Iron Deposits (B5)  Field Observations (in. from ground surface):  Surface Water Present?  Yes  No  Depth of water (in.)  Seeping in at that depth but not yet filled?  Saturation Present?  Yes  No  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Water-Stained Leaves (B9)  Drainage Patterns (B10)  You'd' Rhizospheres on Living Roots (C3) (within 12")  Presence of Reduced Iron (C4)  (pos. qo rosil color charge w/in 12")  Satl Deposits (C5)  Nastl	HYDROLOGY					
Surface Water (A1)	Wetland Hydrology Indicators (check ones that a	apply, <b>measure from soil surfac</b> e	: Seconda	ry Indicators (at least	2 are required)	
High Water Table (A2) (w/in 12")    Main Deposits (B15)   Mart Deposits (B2)   Mart Deposits (B15)   Mart Deposits (B3)   Mart Deposits (B2)   Mart Deposits (B15)   Mart Deposits (B15	Primary Indicators (any one indicator is sufficient	)	_ <u>M_</u> Wate	r-Stained Leaves (B9	))	
Saturation (A3) (w/in 12")   More Sparsely Vegetated Concave Surface (B8)   Presence of Reduced Iron (C4) (pos. q,α or soil color charge w/in 12")   More Marks (B1)   More		<b>`</b> . <b>'</b>		age Pattems (B10)_		
Water Marks (B1)  Marl Deposits (B15)  North Deposits (B2)  North Deposits (B3)  North Deposits (B4)  North Deposits (B5)  North Deposits (B4)  North Deposits (B4)  North Deposits (B4)  North Deposits (B4)  North Deposits (B5)  North Deposits (B4)  North Deposits (B5)  North Deposi	High Water Table (A2) (w/in 12")	ndationVisible on Aerial Imagery (				
Water Marks (B1) N Sediment Deposits (B2) N Hydrogen Sulfide Odor (C1) N Stunted or Stressed Plants (D1) N Drift Deposits (B3) N Algal Mator Crust (B4) N Iron Deposits (B5)  Field Observations (in. from ground surface):  Surface Water Present?  Water Table Present?  Yes No Depth to water (in.) Seeping in at that depth but not yet filled?  Seeping in at that depth but not yet filled?  Seeping in at that depth but not yet filled?  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation (A3) (w/in 12")	arsely Vegetated Concave Surface	(B8) Presi	ence of Reduced Iron α.α. or soil color chanα	ı (C4) ıe w/in 12")	
Dry-Season Water Table (C2) (w/in 12"-24"   Molecular Mineral, 12"-40" organic)  Nother (explain)  Not	<u>N</u> Water Marks (B1) <u>N</u> Ma	rl Deposits (B15)			,	
Malgal Mat or Crust (B4)  Nother (explain)  Noth	Sediment Deposits (B2)	drogen Sulfide Odor (C1)	<u></u> M Stun	ted or Stressed Plant	s (D1)	
Algal Mat or Crust (B4)  Nother (explain)  Nothe	N Drift Deposits (B3)	-Season Water Table (C2) (w/in 12	. /.		FP	
Microtopographic Relief (D4) (caused by water)  Field Observations (in. from ground surface):  Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?: 14  Saturation Present? Yes No Depth to sat. (in.) 1  (includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	mir				. 40°\	
Field Observations (in. from ground surface):  Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present? Yes No Depth to sat. (in.)  (includes capillary fringe)	[[지도]] 젊은 는 기약과 제상 다른 경우를 가고 있는 성상 <mark>를 가고</mark> 했다.	iei (explairi)	\ 1 .	•	IVERS ACTIVE	
Field Observations (in. from ground surface):  Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes _X No Depth to water (in.)  Seeping in at that depth but not yet filled?:/  Saturation Present? Yes _X No Depth to sat. (in.)//  (includes capillary fringe)	TV IIOII Deposits (Bo)		7	. •	, , , (badood by Halbi)	
Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?: 14  Saturation Present? Yes No Depth to sat. (in.) 1  (includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Observations (in. from ground surface):		7	, <i>/</i>		
Seeping in at that depth but not yet filled?:   Saturation Present? Yes No Depth to sat. (in.) // Wetland Hydrology Present? Yes No (includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		Depth <b>of</b> water (in.)	_			
Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water Table Present? Yes X No	Depth <b>to</b> water (in.)	_			
(includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Seeping in at th	at depth but not yet filled?: 14				
(includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation Present? Yes 🔀 No	Depth <b>to</b> sat. (in.)	Wetland	Hydrology Present?	Yes_X_ No	
		Epi Endo Unknown			<del>,</del>	
Remarks:	Describe Recorded Data (stream gauge, monitorin	g well, aerial photos, previous insp	ections), if availab	e:		
	Remarks:					

Plot Number	HDR532	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87173
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.03923

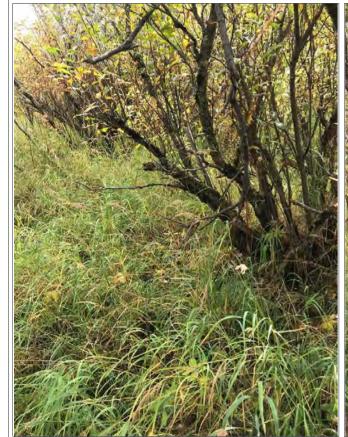






Photo Type: Hydrology

Direction: E

Photo Type: Hydrology

Direction: N

Photo Type: Soils

Direction: NA

Plot Number	HDR533	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1C	Latitude (DD)	61.87195
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.03974







Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

Plot Number	HDR534	Wetland Status	Upland	Vegetation Type	Bare Ground (Disturbed)
Plot Type	FVP: Field Verification Point	NWI Classification	C	Latitude (DD)	61.87183
Plot Date	9/12/2022	НСМ	N/A	Longitude (DD)	-162.03982







Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: NW

Photo Type: Vegetation

Direction: SE

Λ	WEILAND DEIERMIN	50 J. Ph.		_		1
Project: Marshall Air po			silvak	CA	_ Date: <u>9</u> /	12/2022
Applicant/Owner: ADOT					Sampling Po	int#: <u>535</u>
Investigator(s): ZP/BC			Firm: HDF	R Alaska, Inc.		
Lat. (dec.°)(ol. 872 790 Lo	ong. <u>162.041645</u> ±	' NAD 83 Rec	orded on G	SPS?: X Marked	l on map?	Field Map #:
Subregion (circle one): SE Southcer	ntral Western Aleutian	Interior Northem	Landform	: Terrowe / FP	_Slope(%):	Aspect: /\/
Local relief: Shape across slope: (linea	r/convex/concave Sha	ipe up/downslope: (	inear/con	vex/concave NW	I classification	: PSS/1/EUN 173
Photo nos./descriptions: NESS	2-5017	Camera#:	v	eg Type (Viereck Le	evel 4 or other)	IIB 20
Are climatic / hydrologic conditions on						L
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydr						
Are Vegetation						
SUMMARY OF FINDINGS		-			·	
Hydrophytic Vegetation Present?	Yes_X_ No					
Hydric Soil Present?	Yes_ <u>X</u>	Is the samp		Yes X No_		
Wetland Hydrology Present?	Yes <u> </u>			Remarks (e.g., ma		
VEGETATION (Use scientific names	.) Estimate absolute % cov	er (not relative cover	r) % can to	stal>100%		
	7 Louinato abbolato 70 00 ve	i (Hot Iciative cover		Dominance Test wo	rksheet:	
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.% Dom? I	Ind. Species	Cov % Dom?	Ind. N	lumber of Dominant	Species	
1. Nove	5			hat are OBL, FACW		(A)
2	6		т	otal Number of Dom	inant	
3	7			pecies Across All S		
4	8				-	
· Total	Tree Cover:		P	ercent of Dominant	Species	20
				hat are OBL, FACW		(A/B)
50% of total cover:		l cover:				
Sapling/Shrub Stratum (woody plants Abs.Cov.% Dom?		ha Cau 9/ Damo		Total % Cove	er of:	Multiply by:
l ^	Ind. Al FACW 7	bs.Cov.% Dom?	Ind.   C			K1= <u>10</u>
	Acw 8.		—   F	ACW species	<u>,o</u> ,	K2=120
	ACU 9.		—   F	· · · - F · · - · · · · · · · · · ·		кз= <u>198</u>
	ACU10.		F	ACU species $\frac{2}{}$	· <u>3</u> ,	K4= <u>12</u>
	7A			JPL + NL species	<i>-</i> ,	<b>(5=</b>
*6. <u>-</u>	12				59 (A)	420 (B)
Total Sapling/S						
50% of total cover:	20% of tota	1 cover: 17,6		Prevalence Index	=B/A= 2.0	64
Herb Stratum						P.V.
		s. Cov.% Dom?	Ind.			e
1. Cal. can. 40 Y F	AC 12	· · · · · · · · · · · · · · · · · · ·	— Н	lydrophytic Vegeta	tion Indicators	
2. Com, pal. 10	<u>BL</u> 13		— F	> Dominance Te		
3. Favi. arv. 15 1 P	AC 14. FC 15.		-	Prevalence In		
	AC 16			0/ 10	1 .	
6	17				i Adaptations" ( arks or on a sej	Provide supporting parate sheet)
7	18			0.1		getation <sup>1</sup> (Explain)
8	19			/ Ploblematich	yaropnylic veg	jetation (Explain)
9	20					
10				Indicators of hydric s		
11	22		— L	e present unless dis	Luivea or prob	iematic.
and were	Herb Cover:	1410				•
	20% of total			ydrophytic	es X	No
Circular 1/10-ac plot or other plot		-	p	egetation Y resent?	es <u>/ \</u> [	40
% Cover of Wetland Bryophytes (where applicable)	% Total Cover o	t Bryophytes	%			
Remarks: Large Pk. gla. located just	autoide a alay		L			
Large Yk.gla. located 1055	an a mad been.					

SOIL Profile Description	• (Doggillo + + +	nth = = - 1	adta dan maratika - ! il' - '					Sampling Point#: 🖰 😕
	•		ed to document the indicat	or or confir	n the abse	nce of indicat	ors)	A Walley Williams
Depth Honzon	Soil Matrix		Redox Fe				α,α dip.	
<u>(in.)</u> <u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist) %	Type <sup>1</sup>	<u>Loc²</u>	<u>Texture</u>	(pos/ neg)	<u>Remarks</u> (or use comment numb
0-2 0:				. ——	<del></del>			
1-9 B,	104R4/2	<u>80</u>	7.54R3/4 10		MPLRC.	5140	<u>+</u>	
		·	7.54R414 10	<u> </u>	r <u>.pl.R</u> C	5100		
1-16 B	2.54 4/1	80	5424/4 lo		MPLRU	<u> </u>	土	
14 -		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7.54R 3/3 10		MAL			
16-10 B3	2.54 4/1	100	<u></u>	Bay. 29 1. 2		SILD	NT	20% platy orga
			<u> </u>	- 1 -		4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
	- 2		<u> </u>	18.		- <del> </del>	· · · · · · · · · · · · · · · · · · ·	
			duced Matrix, CS=Coated					Root Channel, M = Ma
Hydric Soil Indicato	ors (checkones tha	t apply, <b>m</b>	easure from top of miner	al layers u	nless othe	rwise noted		
Standard Indicators			Indicators for Prob				<i>t</i> :	
Histosol or Hist	• •		_ <u>N</u> Depleted Belo	w Dark Sur	face (A11)		Alaska Co	lor Change <sup>4</sup> (TA4)
	n (A2) (8-16" organic: mineral soil with chrom		Depleted Mati	ix (F3)			_ Alaska Alp	ine Swales (TA5)
N Black Histic (A3		,	Redox Dark S	urface (F6)		X	Alaska Re	dox with 2.5Y Hue
M Hydrogen Sulfi	, ide (A4) (within 12"of	mineral			7)	7	9	l without Hue 5Y or
surface; @			Depleted Dair	Sunace (F	′)		Redder	Underlying Layer
Thick Dark Sur	face (A12)		Redox Depres	sions (F8)		<del>- }</del>		lyl positive (see pg. 91)
_/√_ Alaska Gleyed	(A13)		Red Parent M	aterial (F21	)	_/	Other (Low	organic matter, low iron, to ty developed., see p.91 o
Alaska Redox (	(A14)		Very Shallow	Dark Surfac	e (F22)			ent; explain in Remarks)
N Alaska Gleyed	Pores (A15)		<sup>3</sup> One indicator of hy	drophytic ve	getation,	one primary in	dicator of we	tland hydrology, and ai
			appropriate landsca	pe position	must be p			
D 4-1-4 - 1/4 -			⁴Give details of colo	A	Remarks.			
Restrictive Layer (if p	resent)		Drainage Class:			uia Cail Duan		
Type: // Depth (inches):	NIA		Soil Map Unit Name		Hyd	ric Soil Pres	ent? Y	'esX No
	70 / 1					- 1		· · · · · · · · · · · · · · · · · · ·
Comments:								
2.	a to be about	1.100 . 1.	manuale la la de	ine II.	e de la con	- idla-	16 : 10	L
	2 1 KYXUUPIYII	- veg +	appropriate lands	ayour 4vi	KIC YN C	Dioniella	tie Indica	11012 49814 S
IYDROLOĞY								
	• •		pply, <b>measure from</b> s <b>oil</b> s	surface):	-			2 are required)
Primary Indicators					n i	Water-Stained		)
Surface Water (A	A TOTAL CONTRACTOR OF THE PARTY	. 6	face Soil Cracks (B6)	2000 (P.7)		Orainage Patt		ding Poots (C2) (within 4
		i	ndation Visible on Aerial Ir		4,5	Presence of R		ving Roots (C3) (within 1 (C4)
Saturation (A3) (		k	rsely Vegetated Concave	Surface (B	7	(pos. α,α or so	il color change	e w/in 12")
<u>~</u> Water Marks (B1	•		1 Deposits (B15)		å	Salt Deposits	•	* '
∠ Sediment Depos	sits (B2)	6	rogen Sulfide Odor (C1)			Stunted or Str		. ·
North Deposits (B	3)	_ <u>√</u> Dry	-Season Water Table (C2) eral, 12"-40" organic)	(w/in 12"-24	7	Geomorphic P		P .
Algal Mat or Crus	st (B4)	A 1	er (explain)	2		Shallow Aquit (w/in 24", can p		12")
✓ Iron Deposits (B5			51 (51)F/2)					4) (caused by water)
1011 Deposits (Do	J)					AC Neutral T	•	, ,
Field Observations (in	n. from ground surfa	ce):			7			•
Surface Water Prese		No 🔀	Depth <b>of</b> water (in.)					
Water Table Present	? Yes X	No	Depth <b>to</b> water (in.)	17				
			at depth but not yet filled?	:13				
Saturation Present?	Yes X	No			Weff	and Hydrolog	v Present?	Yes X No
(includes capillary frin			Epi Endo Unkn				,	
		monitorin	g well, aerial photos, previo		ons), if ava	ilable:		
					•			
Remarks:								
A*-								

Plot Number	HDR535	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87279
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.0417







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: S

Plot Number	HDR536	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1C	Latitude (DD)	61.87268
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.04148







Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

### **Marshall Airport and Access Road Improvements**

Plot Number	HDR537	Wetland Status	Wetland	Vegetation Type	Wet Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	PEM1C	Latitude (DD)	61.87289
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.04181







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Plot Number	HDR538	Wetland Status	Upland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87304
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04218







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: S

Plot Number	HDR539	Wetland Status	Upland	Vegetation Type	Mesic Herbaceous
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87312
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04263

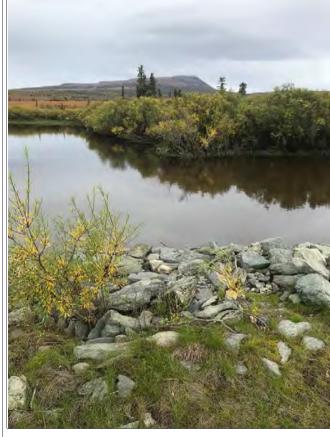






Photo Type: Hydrology

Direction: N

Photo Type: Hydrology

Photo Type: Vegetation

Direction: E

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR540	Wetland Status	Wetland	Vegetation Type	Open Tall Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1B	Latitude (DD)	61.8736
Plot Date	9/12/2022	ндм	Riverine	Longitude (DD)	-162.04344







Direction: S

Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR541	Wetland Status	Wetland	Vegetation Type	Shrub Birch Willow
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87371
Plot Date	9/12/2022	ндм	Slope	Longitude (DD)	-162.04381







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: W

Project. Mars As II Air perk   Berough/City   J.S. IVAK   A   Date: #1/2   Ze22A   Applican/Owner   Applican	WETLAND DETERMINATION DATA FORM	- Alaska Region	
Investigatorian	Project: Marshall Airport Borough/City: KUS, 1/2	ak CA	Date: 9/12/2022
Lat (dec.*)	Applicant/Owner: ADDT		Sampling Point#: 542
Subregion (circle one): SE Southcentral Western Aeutian Interior Northern Landform:	Investigator(s): 711/BC Firm:	HDR Alaska, Inc.	
Subregion (circle one): SE Southcentral Western Aeutian Interior Northern Landform:	Lat. (dec. °) 61. 973363 Long. 162. 04411 7 ± 'NAD 83 Recorded	on GPS?: X Marked	on map? X Field Map #:
Photo nos./descriptions: // Sci / S / Y / Camera #: Veg Type (Viereck Level 4 or other): ### Are climatic / hydrologic conditions on the site typical for this time of year? Yes, No. / Info. explain. Job / HIGH type: /// Are Vegetation / Soil / or Hydrology / significantly disturbed? Are Normal Circumstances' present? Yes / No. / Are Vegetation / Soil / or Hydrology / naturally problematic? In Dry Season? Yes   No. / If needed, explain answers here.  SUMMARY OF FINDINGS  Hydrolohytic Vegetation Present? Yes   No. / Is the sampled ame within a wetland? Yes   No. / Westland Hydrology Present? Yes   No. / The Westland Hydrology Present? Yes   No. / Westland Hydrology Mystland Hydrologus Mystland Hydrology Mystland Hydrology Mystlan			
Are climatic / hydrologic conditions on the site bypical for this time of year? Yes. No:	Local relief: Shape across slope: (linear/convex/concave Shape up/downslope: /linear/	convex/concave NW	/I classification:
Are Vegetation \( \) Soil \( \) or Hydrology \( \) significantly disturbed? Are Normal Circumstances' present? \( \) Yes \( \) No \( \) Are Vegetation \( \) Soil \( \) or Hydrology \( \) naturally problematic? In Dry Season? \( \) Yes \( \) No \( \) if needed, explain answers here. \( \)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? \( \) Yes \( \) No \( \)	Photo nos./descriptions: NESW Soll XZ Camera#:	Veg Type (Viereck Le	evel 4 or other): <u>IIB</u>
Are Vegetation   N.   Soil   N.   Are Vegetation   N.   Soil   No.   Solumnary   No.   Is the sampled are within a wetland?   No.	Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wells	HGM type: N/A
Are Vegetation   N.   Soil   N.   Are Vegetation   N.   Soil   No.   Solumnary   No.   Is the sampled are within a wetland?   No.	Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circ	umstances" present? Y	es <u></u> No
Hydrophytic Vegetation Present?   Yes	Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Y	esNo_X If need	ded, explain answers here.
Hydric Soil Present?   Yes		And the second	and the second second
Prysic   Sol   Present?   Yes   No	Is the sampled at	Pa	
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.           Tree Stratum (dbh2 3°)         Dom? Ind.         Species         Cov.% Dom? Ind.         Dom? Ind.         Number of Dominant Species That are OBL, FACW, or FAC.         (A)           1.	Hydric Soil Present? Yes No Within a wetland		X
Dominance Testworksheet:   Number of Dominant Species   Total Tree Cover	Wetland Hydrology Present? Yes No X	Remarks (e.g., ma	rginal?):
Test Stratum (doha 3)   Species   Cov.	VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	an total >100%.	are and this basely a side of
Species   Cov.%   Dom?   Ind.   Species   Cov.%   Dom?   Ind.   Number of Dominant Species   That are OBL, FACW, or FAC:   (A)	Tree Stratum (dbh≥ 3")	Dominance Test wo	rksheet:
2.			
3		That are OBL, FACW	/, or FAC:(A)
1			
That are OBL, FACW, or FAC:   Solidar   Sol	3	Species Across All St	trata: (B)
That are OBL, FACW, or FAC:   Solidar   Sol	The state of the s		
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total Tree Cover:	That are OBL, FACW	
Abs.Cov.% Dom? Ind.  1. Sol. pol. 20 Y FACW 8.  3. Ros. ac [ 30 Y FACW 9.  4. Sol. b.b. 25 Y FAC 10.  5. Vito clar. 3 FACW 11.  6. 12.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FAC 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Total Sapling/Shrub Cover.  4. Sol. b.b. 25 Y FACW 10.  Abs. Cov. Mom? Ind.	50% of total cover: 20% of total cover:		
1   Sul, pul, 20	Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cove	er of: Multiply by:
Sali arb,   20		OBL species	- X1= -
Section   20    FAC up   Section		J. Carlotte and Ca	
FACU species   33   X4=  32   X4=			
5. \( \frac{1}{10} \) eds. \( \frac{3}{3} \) \( \frac{1}{11} \) \( \frac{1}{12} \) \( \frac{1}{3} \)			
Column Totals:   Z8			
Total Sapling/Shrub Cover.   48   20% of total cover.   19.6   Prevalence Index = B/A =   2.95	6 12		
Abs.Cov.%   Dom?   Ind.   Abs.Cov.%   Dom?   Ind.	Total Sapling/Shrub Cover: 98	A PRINCIPAL AND A STATE OF	
Abs.Cov.%   Dom?   Ind.   Abs.Cov.%   Dom?   Ind.	50% of total cover: 49 20% of total cover: 19.6	Prevalence Index	=B/A= 2.95
1. Col. can. 20 Y FAC 13.  2. Equ. avv. 10 Y FAC 13.  3.	Herb Stratum	1 Tovalonio macx	DIX - 201
2.			
2.		Hydrophytic Vegeta	tion Indicators:
A		~	
16.			
6		A)	144-44-10-11
7			arks or on a separate sheet)
8		N Problematic H	vdrophytic Vegetation 1 (Explain)
10		Toblematicity	ydiophytic vegetation (Explain)
11		1	
Total Herb Cover: 30 50% of total cover: 20% of total cover: 4 Hydrophytic Circular 1/10-ac plot or other plot dimension: 10 × 10			
50% of total cover:	Total Herb Cover 30		The state of the s
Circular 1/10-ac plot or other plot dimension: \( \frac{10 \times 10}{0} \) % of bare ground: %  Cover of Wetland Bryophytes % Total Cover of Bryophytes %  (where applicable)  Yes No		Lhadron by 41-	
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)		Vegetation Y	es X No
(where applicable)		Present?	
кетакк:	(where applicable)	NO.	
	Remarks:		A STATE OF THE STA

#### **Marshall Airport and Access Road Improvements**

Plot Number	HDR542	Wetland Status	Upland	Vegetation Type	Closed Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.87336
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04412







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Airport Borough/City: Kusilva	
Applicant/Owner: ADOT	Sampling Point#: 543
	HDR Alaska, Inc.
Lat. (dec. °) 61.873549 Long. 162.044668 ± 'NAD 83 Recorded 6	on GPS?: Marked on map? Z Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	form: Valley Bottom Slope (%): 3 Aspect: SE
Local relief: Shape across slope: (linear) convex / concave Shape up/downslope: linear)	
Photo nos./descriptions:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circu	
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season? You	esNo _X If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled an	
Hydric Soil Present? Yes No within a wetland	? Yes No
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
1. None 5	
2 6 3 7	Total Number of Dominant Species Across All Strata: 4
4. 8.	Species Across All Strata:(B)
The state of the best of the state of the st	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species/O X1=/O
1. Sal pul. 25 Y FACW 7.  2. Betinan, 35 Y FAC 8.	FACW species 31 X2= 62
3. VAC. U.1. 15 FAC 9.	FAC species 88 X3= 264
4. Prc. 319. 5 - FACUNIO.	FACU species
5	UPL + NL species X5=
6 12	Column Totals: 134 (A) 356 (B)
Total Sapling/Shrub Cover: 80	
50% of total cover: 40 20% of total cover:	Prevalence Index = B/A = 2.66
Herb Stratum	The state of the s
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Cal. cun. 20 Y FAC 12.	Hydrophytic Vegetation Indicators:
3. Com. pal. 5 OBL 14.	Dominance Test is >50%
4. Equiary: 15 Y FAC 15.	Prevalence Index is ≤3.0
5. Po 1, αcu, 3 FAC 16.	Morphological Adaptations (Provide supporting
6. Eri. Vay. 3 Frewhr.	data in Remarks or on a separate sheet)
7. Cor. ago. 5 OBL 18.	Problematic Hydrophytic Vegetation (Explain)
8	
9	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 54	
50% of total cover: 27 20% of total cover: 10.8	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable)  Remarks:	
Remains.	

Profile Description	/D 11 1 11 1				Port of the		313 1155		Sampling Point#: 543
The second secon	: (Describe to the de	pth needed				n the abse	ence of indicat	ors)	WEST WITH
Depth Horizon Soil Matrix Redox Feature		tures			α,α dip.	D			
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	(pos/ neg)	Remarks (or use comment number)
878 B	2.54 4/1	80 5	42 4/4	20		MALAC	5140	NT	
				the latest		Williahae		The state of the s	STATE STATE OF STREET
	50 X 11 -78 2 15 15 15 15	V <u>20</u> 12				Panels.			to the state of the
				-			-		No. of Contract of
	(6. 1) (a) (1)				_		The same of		
The Tax for another	CONTRACTOR	X inc.					4	19	Car Carrier and Mark
<sup>1</sup> Type: C = Concent	tration, D = Depletion	, RM = Redu	ced Matrix, CS=	Coated	Sand Gra	ns <sup>2</sup> Locatio	on: PL = Pore	Lining, RC	Root Channel, M = Matrix
Hydric Soil Indicate	ors (check ones that	apply, mea	sure from top of	minera	layers u	nless othe	erwise noted)	CANEED!	
Standard Indicators			Indicators fo		and the second s		A .	n .	ye saffine ports
	tel (A1) in (A2)  (8-16" organics	sat'd	- 41			face (A11)	10		olor Change <sup>4</sup> (TA4)
underlain by	mineral soil with chroma		4.1	ed Matrix	The state of the s		N	_ Alaska Al	pine Swales (TA5)
Black Histic (A:					rface (F6)		1	The Make the Section	edox with 2.5Y Hue
surface; @	fide (A4) (within 12"of " in this pit	minerai	_/V Deplete	ed Dark	Surface (F	7)	70		d without Hue 5Y or r Underlying Layer
M Thick Dark Sur	face (A12)		Redox	Depress	ions (F8)		N	_ α,α-dipyri	dyl positive (see pg. 91)
N Alaska Gleyed	(A13)		M Red Pa	rent Ma	terial (F21	)	N	Other (Lov	w organic matter, low iron, hig intly developed., see p.91 of
Alaska Redox	A. A. Carrier				ark Surfac			Supplem	ent; explain in Remarks)
Alaska Gleyed	Pores (A15)		³One indicato appropriate la ⁴Give details	andscap	e position	must be p	one primary in resent unless	dicator of we disturbed or	etland hydrology, and an problematic.
Restrictive Layer (if p	present)	4	Drainage Cla						
Type: Non	1 1/10		Soil Map Unit	t Name:	-	Hyd	Iric Soil Pres	ent?	Yes No
Depth (inches):	NIA	CONT.				-	Esta la la	YI	
Comments:									
2. WOULD 1/20	meet AKRed	v 754	Hx is no	able	natio				
IYDROLOGY	73777(8)	2701	1		THE REAL PROPERTY.				15 17 19 17 17 17
Wetland Hydrology	Indicators (check or	nes that app	ly, measure from	n soil su	ırface):	Seco	ondary Indicate	ors (at least	2 are required)
Primary Indicators	(any one indicator is	sufficient)				0000			
Surface Water (	A1)	Surface	a Cail Cracks (D				Water-Stained		).
AV THE MALE THE						NI	Drainage Patte	ILeaves (B9 ems (B10)_	<u>an Illiavena</u>
The state of the s	le (A2) (w/in 12")		ation Visible on A	Aerial Ima	-	N	Drainage Patte Oxid'd Rhizosp	Leaves (B9 erns (B10)_ oheres on L	ving Roots (C3) (within 12")
Saturation (A3)	le (A2) (w/in 12") (w/in 12")	N Spars	ation Visible on A ely Vegetated Co	Aerial Ima	-	N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so	Leaves (B9 ems (B10) _ bheres on Li educed Iron il color chang	ving Roots (C3) (within 12")
Saturation (A3) ( Water Marks (B1	le (A2) (w/in 12") (w/in 12") I)	N Spars	ation Visible on A ely Vegetated Co eposits (B15)	Aerial Ima	-	(A)	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (	I Leaves (B9 erns (B10) _ oheres on Li educed Iron iil color chang (C5)	iving Roots (C3) (within 12") (C4) e w/in 12")
Saturation (A3) ( Water Marks (B1) Sediment Depos	le (A2) (w/in 12") (w/in 12") I) sits (B2)	Sparse     Marl D     Marl D     Hydrog	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo	Aerial Ima oncave S	Surface (B	N N N N N N N N N N N N N N N N N N N	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre	I Leaves (B9 erns (B10) _ pheres on Li educed Iron il color chang C5)	ving Roots (C3) (within 12") (C4) e w/in 12")
Saturation (A3) Water Marks (B1 N Sediment Depos Drift Deposits (B	le (A2) (w/in 12") (w/in 12") 1) sits (B2)	<ul><li>✓ Sparse</li><li>✓ Marl D</li><li>✓ Hydrog</li><li>✓ Dry-Se</li><li>minera</li></ul>	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab I, 12"-40" organic)	Aerial Ima oncave S r (C1)	Surface (B	8) W V	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita	I Leaves (B9 ems (B10) _ pheres on Li educed Iron iil color chang (C5) essed Plant osition (D2) ard (D3)	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) Water Marks (B1  Sediment Depos  Drift Deposits (B	le (A2) (w/in 12") (w/in 12") I) sits (B2) 3) st (B4)	<ul><li>✓ Sparse</li><li>✓ Marl D</li><li>✓ Hydrog</li><li>✓ Dry-Se</li><li>minera</li></ul>	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab	Aerial Ima oncave S r (C1)	Surface (B	N   N   N   N   N   N   N   N   N   N	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	I Leaves (B9 ems (B10) _ cheres on Li educed Iron ili color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) Water Marks (B1  Sediment Deposits (B	le (A2) (w/in 12") (w/in 12") I) sits (B2) 3) st (B4)	<ul><li>✓ Sparse</li><li>✓ Marl D</li><li>✓ Hydrog</li><li>✓ Dry-Se</li><li>minera</li></ul>	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab I, 12"-40" organic)	Aerial Ima oncave S r (C1)	Surface (B	X   X   X   X   X   X   X   X   X   X	Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe	Leaves (B9 erns (B10) _ oheres on Li educed Iron ill color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	iving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) ( Water Marks (B1  Sediment Deposit  Drift Deposits (B)  Algal Mat or Crus  Iron Deposits (B)	le (A2) (w/in 12") (w/in 12") I) sits (B2) 3) st (B4)	Spars  Marl D  Hydro  Dry-Se minere  Other	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)	Aerial Ima oncave S r (C1) ble (C2) (	Surface (B	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	Leaves (B9 erns (B10) _ oheres on Li educed Iron ill color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) Water Marks (B1  Sediment Depos  Drift Deposits (B  Algal Mat or Crus  Iron Deposits (B8)	le (A2) (w/in 12") (w/in 12") (I) sits (B2) (I) st (B4) (I) sits (B4) (I)	Spars  Marl D  Hydro  Dry-Se minere  Other	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)	Aerial Ima poncave S r (C1) ble (C2) (	Surface (B	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	Leaves (B9 erns (B10) _ oheres on Li educed Iron ill color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) Water Marks (B1  Sediment Deposit  Drift Deposits (B  Algal Mat or Crus  Iron Deposits (Bs)  Field Observations (ii  Surface Water Prese	le (A2) (w/in 12") (w/in 12") (y/in 12") (sits (B2) (3) (st (B4) (5) (n. from ground surface (ent? Yes X	Spars  Mari D  Hydro  Dry-Se minera  Other  De):  No	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)	Aerial Ima poncave S r (C1) ble (C2) (	Surface (B	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	Leaves (B9 erns (B10) _ oheres on Li educed Iron ill color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) ( Water Marks (B1) Sediment Deposits (B) Drift Deposits (B) Algal Mat or Crust Iron Deposits (B) Field Observations (ii Surface Water Preservations (Table Present)	le (A2) (w/in 12") (w/in 12") (w/in 12") (i) sits (B2) (ii) sits (B4) (iii) sits (B4) (iii) sits (B2) (iii) sits (B4) (iii) si	Spars  Marl D  Hydro  Dry-Se minera  Other  No  No  g in at that	ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)  Depth of water Depth to water	Aerial Ima poncave S r (C1) ble (C2) (	Surface (B w/in 12"-24	10m sh	Drainage Patte Oxid'd Rhizose Presence of Ri (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pi Microtopograp FAC Neutral Te	I Leaves (B9 erns (B10) _ pheres on Li educed Iron iil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D est (D5)	e wing Roots (C3) (within 12") (C4) (B) (C5) (C7) (C7) (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9
Saturation (A3) Water Marks (B1  Water Marks (B1)  Deposits (B1)  Algal Mat or Crust  Iron Deposits (B2)  Field Observations (ii  Surface Water Preset  Water Table Present?	le (A2) (w/in 12") (w/in 12") (w/in 12") (I) sits (B2) (I) sits (B4) (I) sits (B4) (I) sits (B4) (I) sits (B2) (I) sits (B4) (I)	Spars  Mari D  Hydro  Dry-Se minera  Other  De):  No	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)  Depth of wate Depth to wated Depth but not yet	Aerial Ima pricave S r (C1) Die (C2) ( er (in.) t filled?: (in.)	w/in 12"-24	10m sh	Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	I Leaves (B9 erns (B10) _ pheres on Li educed Iron iil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D est (D5)	ving Roots (C3) (within 12") (C4) e w/in 12") s (D1)
Saturation (A3) Water Marks (B1  Water Marks (B1)  Sediment Deposits (B2)  Prift Deposits (B2)  Iron Deposits (B2)  Field Observations (ii)  Surface Water Present  Water Table Present  Saturation Present?  (includes capillary frince)	le (A2) (w/in 12") (w/in 12") (w/in 12") (I) sits (B2) (I) sits (B4) (I) sits (B4) (I) sits (B4) (I) sits (B2) (I) sits (B4) (I)	Spars  Mari D  Hydrog  Dry-Se  minera  Other  No  No  ng in at that	ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odo eason Water Tab il, 12"-40" organic) (explain)  Depth of wate Depth to wate depth but not yet Depth to sat. Epi Endo	Aerial Ima concave S r(C1) Die (C2) ( er (in.) t filled?: Unknow	w/in 12"-24	Wett:	Drainage Patte Oxid'd Rhizose Presence of Re (pos. α,α or so Salt Deposits ( Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pe Microtopograp FAC Neutral Te	I Leaves (B9 erns (B10) _ pheres on Li educed Iron iil color chang (C5) essed Plant osition (D2) ard (D3) erch H <sub>2</sub> O w/ir hic Relief (D est (D5)	e wing Roots (C3) (within 12") (C4) (B) (C5) (C7) (C7) (C9) (C9) (C9) (C9) (C9) (C9) (C9) (C9

Plot Number	HDR543	Wetland Status	Wetland	Vegetation Type	Shrub Birch Willow
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87355
Plot Date	9/12/2022	ндм	Slope	Longitude (DD)	-162.04467







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

Plot Number	HDR544	Wetland Status	RPW	Vegetation Type	Open Water
Plot Type	SC: Stream Crossing	NWI Classification	R3UBH	Latitude (DD)	61.87456
Plot Date	9/12/2022	ндм	Riverine Channel	Longitude (DD)	-162.04563







Photo Type: Hydrology

Direction: N

Photo Type: Hydrology

Direction: NE

Photo Type: Hydrology

Direction: W

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: Kusilva	K CA Date: 9/12/2022
Applicant/Owner: ADO T	Sampling Point#: 545
	HDR Alaska, Inc.
Lat. (dec. °) <u>Col. 874 9 4 9</u> Long. <u>162.046315</u> ± 'NAD 83 Recorded of	on GPS?: X Marked on map? V Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfe	orm: Toeslope Slope (%): O Aspect: N/
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/convex/concave	
Photo nos./descriptions: NEShi - 2501 Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: ×	
Are Vegetation $ \underbrace{\mathcal{N}}_{,}$ , Soil $ \underbrace{\mathcal{N}}_{,}$ , or Hydrology $ \underbrace{\mathcal{N}}_{,}$ significantly disturbed? Are "Normal Circu	
Are Vegetation M, Soil M, or Hydrology M naturally problematic? In Dry Season? You	sNo If needed, explain answers here.
SUMMARY OF FINDINGS	as all the control of the control of the
Hydrophytic Vegetation Present? Yes No Is the sampled are	a make a second
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%.  Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	Dominance lest worksneet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Nord 5	That are OBL, FACW, or FAC:(A)
2 6 7 7	Total Number of Dominant Species Across All Strata:
48	Species Across All Strata: (B)
And the state of t	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
2. Vac. v. t. 15 Y FAC 8.	FACW species 36 x2= 72
3. Vac. vii. 10 FAC 9.	FAC species _55 X3= /65
4. Betinan 10 FAC 10.	FACU species / X4= · 4
5. Sal. pv1, 3 FACW11.	UPL + NL species X5=
6. Emp. nig. 5 FAC 12.	Column Totals: 92 (A) 241 (B)
Total Sapling/Shrub Cover: 69	I Mary Long Copy of the Long Andrews of the
50% of total cover: 34, 5 20% of total cover: 13, 8	Prevalence Index = B/A = 2.62
Herb Stratum	STANDARD OF THE STANDARD OF TH
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Car. big. 15 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Rub. cha. 5 4 FACW 13. 3. Eri. vac. 3 FACW 14.	Dominance Test is >50%
4	Prevalence Index is ≤3.0
516	Morphological Adaptations (Provide supporting
6	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation (Explain)
8	
9	
10 21	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 23	
50% of total cover: 11,5 20% of total cover: 4,6	Lhadronhadia
Circular 1/10-ac plot X or other plot dimension: % of bare ground:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks: Lithen, 25%	
Lillen, Cito	

Profile Description: (Describe to the depth needed to document the Indicator or confirmine absence of inclustors)   Depth   Horizon   Soil Matrix   Red Septings   0 a.d. dp.	SOIL	المواد الكاتب				Sampling Point#: <u>545</u>
(Cutes comment number)    Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS = Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix	Profile Description: (Describe to the depth needed	to document the indicator	rorconfirm th	e absence of indic	ators)	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):   This   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion, D = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration, D = Depletion Matrix, CS=Coaled Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix   Type: C = Concentration	Depth Honzon <u>Soil Matrix</u>	Redox Fea	tures			_ '.
Comments	(in.) (opt.) Color (moist) %	Color (moist) %	Type <sup>1</sup> I	Loc <sup>2</sup> Texture		
Type: C = Concentration, D = Depletion, RM= Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix Phydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):	0-2 0:					
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains*1.coaton: PL = Pore Lining, RC = Root Channet, M = Metrix Mydric Soil Indicators (check ones that apply), measure from top of mineral layers unless otherwise noted):  Standard indicators:    Hattosolor Histel (A1)   Alaska Color Change* (TA4)   Hattosolor Histel (A1)   Alaska Color Change* (TA4)   Alaska Color Change* (TA5)   Alaska Color Change* (TA5)   Alaska Change (TA5)   Alaska Ch						
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):	6-12 Ba N4/1 75 5	4244 25	<u>C</u> M	PLRC SILO	. <u>+</u>	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):						
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):					-	:
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):		*.			-	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):						·
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):				-	·	
Standard Indicators:   Indicators for Problematic Hydric Soils*:     Depleted Below Dark Surface (A11)     Alaska Color Change* (TA4)     Depleted Below Dark Surface (A11)     Alaska Color Change* (TA5)     Depleted Matrix (F3)     Alaska Alpine Swales (TA5)     Alaska Alpine Swales (TA5)     Depleted Matrix (F3)     Alaska Alpine Swales (TA5)     Alaska Redox with 2.5Y Hue   Alaska Gleyed (A13)     Alaska Gleyed (A13)     Alaska Redox Alaska Alpine Swales (TA5)     Alaska Redox Alaska Gleyed (A13)     Alaska Gleyed (A13)     Alaska Gleyed (A14)     Alaska Gleyed (A15)     Alaska Gleyed (A15)     Alaska Gleyed (A15)     Alaska Gleyed (A15)     Alaska Gleyed Fores (A15)     Alaska G			······································			= Root Channel, M = Matrix
Mistosol of Histel (A1)   Mistosol of Histel (A1)   Mistosopheron (A2) (8-6f organics, safd, mistosal by with chrome s2)   Mistosal by with chrome s2   Mistosal by with chrome s2   Mistosal by with chrome s2   Mist					d):	
Listic Epipedon (A2) (8-16" organics, sar'd, undertain by mineral soil with chrome s2)			-		01	, A
underiah by mineral soli with chromas 2)  Delpieted Matrix (F3)  Alaska Redox With 2.5Y Hue surface; @	• •	Depleted Below	/ Dark Surfac	e (A11)	<u>fU_</u> Alaska Co	olor Change⁴ (TA4)
## AK Gieyed without Hus SY or surface; @in this pit of surface; @		_/// Depleted Matrix	(F3)		Alaska Al	pine Swales (TA5)
aurface; @in this pit	Black Histic (A3)	N Redox Dark Sur	face (F6)		<u> </u>	edox with 2.5Y Hue
Martic Dark Surface (A12)		N Depleted Dark S	Surface (F7)	6	AK Gleye	d without Hue 5Y or
Alaska Gleyed (A13)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A14)  Alaska Redox (A15)  One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.   Give details of color change in Remarks.  Restrictive Layer (if present)  Type:  Alaska Gleyed Pores (A15)  Drainage Class:  Drainage Class:  Drainage Class:  Drainage Class:  Drainage Class:  Poputh (inches):  Alaska Hydrology indicators (check ones that apply, measure from soil surface):  Hydric Soil Present?  Yes No  Primary Indicators (any one indicator is sufficient)  Alaska Gleyed (A13)  Alaska Gleyed (A15)  Wetland Hydrology indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  Alaska Gleyed (A15)  Alaga Mater Table (A2) (win 12")  Alaska Gleyed (A15)  Alaga Mater Table (A2) (win 12")  Alaga Mator Crust (B4)  Alaga M		2	, ,		_ I	1 (15) U 15) SARABAN 1
Alaska Redox (A14)		<u>IV</u> Redox Depress	ions (F8)		-7	
Alaska Redox (A14)	_/U_ Alaska Gleyed (A13)	Red Parent Mat	enal (F21)	. <u></u>	Other (Lov nH. rece	w organic matter, low iron, high
appropriate landscape position must be present unless disturbed or problematic. "Give details of color change in Remarks.  Restrictive Layer (if present) Type:	Alaska Redox (A14)	_ <i>N</i> _Very Shallow Da	ark Surface (l	=22)		
**Give details of color change in Remarks.**  Restrictive Layer (if present)	Alaska Gleyed Pores (A15)	<sup>3</sup> One indicator of hydr	ophytic vege	tation, one primary	indicator of we	etland hydrology, and an
Restrictive Layer (if present) Type:	,				ss disturbed or	problematic.
Type:	Restrictive Laver (if present)			Titalka.		
Depth (inches):		1 2		Hydric Soil Pre	sent?	Yes X No
Comments: 1. 2. 3. What was F3 + La if problematics.  HYDROLOGY  Wettand Hydrology Indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  M. Surface Water (A1)  M. High Water Table (A2) (w/in 12")  M. Surface Water (A2)  M. High Water Table (A2) (w/in 12")  M. Saturation (A3) (w/in 12")  M. Sparsely Vegetated Concave Surface (B8)  M. Water Marks (B1)  M. Sediment Deposits (B2)  M. Hydrogen Sulfide Odor (C1)  M. Drift Deposits (B3)  M. Algal Mat or Crust (B4)  M. Other (explain)  M. Other (explain)  M. Depth of water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping In at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping In at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping In at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Seeping In at that depth but not yet filled?:  Saturation Present?  Yes  No  Depth to water (in.)  Wetland Hydrology Present?  Yes  No  No  No  No  No  No  No  No  No		, <b>,</b>				7
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  ✓ Surface Water (A1)  ✓ High Water Table (A2) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Sparsely Vegetated Concave Surface (B8)  ✓ Water Marks (B1)  ✓ Presence of Reduced Iron (C4) (pos. a, a or soil color charge w/in 12")  ✓ Saturation Deposits (B2)  ✓ Hydrogen Sulfide Odor (C1)  ✓ Drift Deposits (B3)  ✓ Algal Mat or Crust (B4)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Saturation Present?  ✓ Yes No Depth to sat. (in.)  ✓ Wetland Hydrology Indicators (at least 2 are required)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Drainage Pattems (B10)  ✓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")  ✓ Presence of Reduced Iron (C4)  (pos. a, a or soil color charge w/in 12")  ✓ Satl Deposits (C5)  ✓ Stunted or Stressed Plants (D1)  ✓ Geomorphic Position (D2) + or Supplied (Page 1)  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ FAC Neutral Test (D5)  Field Observations (in. from ground surface):  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet f						
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  ✓ Surface Water (A1)  ✓ High Water Table (A2) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Sparsely Vegetated Concave Surface (B8)  ✓ Water Marks (B1)  ✓ Presence of Reduced Iron (C4) (pos. a, a or soil color charge w/in 12")  ✓ Saturation Deposits (B2)  ✓ Hydrogen Sulfide Odor (C1)  ✓ Drift Deposits (B3)  ✓ Algal Mat or Crust (B4)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Saturation Present?  ✓ Yes No Depth to sat. (in.)  ✓ Wetland Hydrology Indicators (at least 2 are required)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Drainage Pattems (B10)  ✓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")  ✓ Presence of Reduced Iron (C4)  (pos. a, a or soil color charge w/in 12")  ✓ Satl Deposits (C5)  ✓ Stunted or Stressed Plants (D1)  ✓ Geomorphic Position (D2) + or Supplied (Page 1)  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ FAC Neutral Test (D5)  Field Observations (in. from ground surface):  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet f	1.	1				
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):  Primary Indicators (any one indicator is sufficient)  ✓ Surface Water (A1)  ✓ High Water Table (A2) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Saturation (A3) (w/in 12")  ✓ Sparsely Vegetated Concave Surface (B8)  ✓ Water Marks (B1)  ✓ Presence of Reduced Iron (C4) (pos. a, a or soil color charge w/in 12")  ✓ Saturation Deposits (B2)  ✓ Hydrogen Sulfide Odor (C1)  ✓ Drift Deposits (B3)  ✓ Algal Mat or Crust (B4)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Iron Deposits (B5)  ✓ Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Saturation Present?  ✓ Yes No Depth to sat. (in.)  ✓ Wetland Hydrology Indicators (at least 2 are required)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Water-Stained Leaves (B9)  ✓ Drainage Pattems (B10)  ✓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")  ✓ Presence of Reduced Iron (C4)  (pos. a, a or soil color charge w/in 12")  ✓ Satl Deposits (C5)  ✓ Stunted or Stressed Plants (D1)  ✓ Geomorphic Position (D2) + or Supplied (Page 1)  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ Shallow Aquitard (D3)  (w/in 24", can perch H₂0 w/in 12")  ✓ FAC Neutral Test (D5)  Field Observations (in. from ground surface):  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet filled?:  Seeping in at that depth but not yet f	3. World mest F3 + L2 Coroblemont	12,				
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):       Secondary Indicators (at least 2 are required)         Primary Indicators (any one indicator is sufficient)       Water-Stained Leaves (B9)         Water Stained Leaves (B9)       Water-Stained Leaves (B9)         Water Water (A1)       Surface Soil Cracks (B6)       Drainage Pattems (B10)         Water Table (A2) (win 12")       Sparsely Vegetated Concave Surface (B8)         Water Marks (B1)       Marl Deposits (B15)       Salt Deposits (C5)         Water Marks (B1)       Marl Deposits (B15)       Salt Deposits (C5)         Water Marks (B1)       Mydrogen Sulfide Odor (C1)       Salt Deposits (C5)         Water Deposits (B3)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Stained Leaves (B9)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Marks (B1)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Marks (B1)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Stained Leaves (B9)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Marks (B1)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1)         Water Stained Leaves (B9)       Mydrogen Sulfide Odor (C1)       Mydrogen Sulfide Odor (C1) <t< td=""><td>₩</td><td></td><td></td><td></td><td></td><td></td></t<>	₩					
Primary Indicators (any one indicator is sufficient)    Surface Water (A1)		v. measure from soil su	ırface):	Secondary Indic	ators (at least	2 are required)
M Surface Water (A1)  M High Water Table (A2) (w/in 12")  M Inundation Visible on Aerial Imagery (B7)  M Saturation (A3) (w/in 12")  M Sparsely Vegetated Concave Surface (B8)  M Water Marks (B1)  M Water Marks (B1)  M Marl Deposits (B15)  M Sediment Deposits (B2)  M Hydrogen Sulfide Odor (C1)  M Drift Deposits (B3)  M Algal Mat or Crust (B4)  M Iron Deposits (B5)  Microtopographic Relief (D4) (caused by water)  Field Observations (in. from ground surface):  Surface Water Present?  Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes No Depth to sat. (in.)  Epi Endo Unknown  Driving Roots (B10)  A Oxid'd Rhizospheres on Living Roots (C3) (within 12")  M Presence of Reduced Iron (C4) (pos. a, a or soil color charge w/in 12")  Saturated or Stressed Plants (D1)  M Stunted or Stressed Plants (D1)  M Stantled or Stressed Plants (D1)  M Geomorphic Position (D2)  M Shallow Aquitard (D3) (w/in 24", can perch H₂O w/in 12")  M Microtopographic Relief (D4) (caused by water)  FAC Neutral Test (D5)  Field Observations (in. from ground surface):  Seeping in at that depth but not yet filled?:  Saturation Present?  Yes No Depth to sat. (in.)  Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		.,,				
Migh Water Table (A2) (w/in 12")  Saturation (A3) (w/in 12")  Water Marks (B1)  Marl Deposits (B15)  Methodology Suffide Odor (C1)  Morrospession (B3)  Minundation Visible on Aerial Imagery (B7)  Water Marks (B1)  Marl Deposits (B15)  Marl Deposits (B10)  Marl	. 1	e Soil Cracks (B6)			•	,
Water Marks (B1)  Water Marks (B1)  Name Deposits (B15)  Name Deposits (B15)  Name Deposits (B2)  Name Deposi		. * *	agery (B7)	7		iving Roots (C3) (within 12")
Water Marks (B1)  Water Marks (B1)  Marl Deposits (B15)  Marl Deposits (B16)  Marl Parl Parl Parl Parl Parl Parl Parl P	Y Saturation (A3) (w/in 12")	ely Vegetated Concave S	urface (B8)	Presence of	Reduced Iron	n (C4)
A   Stunted or Stressed Plants (D1)   A   Stunted or Stressed Plants		-	,	A / "		je w/in 12")
M Drift Deposits (B3)       N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)       ✓ Geomorphic Position (D2) the slope         M Algal Mat or Crust (B4)       M Other (explain)       ✓ Shallow Aquitard (D3) (w/in 24", can perch H₂O w/in 12")         Iron Deposits (B5)       Microto pographic Relief (D4) (caused by water)         Field Observations (in. from ground surface):       Surface Water Present?       Yes No Depth of water (in.)         Water Table Present?       Yes No Depth to water (in.)       Wetland Hydrology Present? Yes No         Saturation Present?       Yes No Depth to sat. (in.)       Wetland Hydrology Present? Yes No         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						s(D1)
Malgal Mat or Crust (B4)	A Day S	. ,	w/in 12"-24"			• •
Microtopographic Relief (D4) (caused by water)   Fact Neutral Test (D5)   Fact Neutral Test (D	minera	ıl, 12"-40" organic)		·	• •	· ·
Field Observations (in. from ground surface):  Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present? Yes No Depth to sat. (in.)  (includes capillary fringe)		(explain)				BUYN "I NOW
Field Observations (in. from ground surface):  Surface Water Present? Yes No _X_ Depth of water (in.)  Water Table Present? Yes No _X_ Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present? YesX_ No Depth to sat. (in.) _6//_  (includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Non Deposits (B5)			/ .		(caused by water)
Surface Water Present? Yes No Depth of water (in.)  Water Table Present? Yes No Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present? Yes No Depth to sat. (in.)  (includes capillary fringe)	Field Obcomedians (in from ground ourfees)	;		- V FAC Neutral	Test (D5)	
Water Table Present? Yes No _X Depth to water (in.)  Seeping in at that depth but not yet filled?:  Saturation Present? Yes _X No Depth to sat. (in.) _6"	The state of the s	Donth of water (in )		•		
Seeping in at that depth but not yet filled?:  Saturation Present? Yes X No Depth to sat. (in.) 6/4 Wetland Hydrology Present? Yes X No (includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Saturation Present? Yes No Depth to sat. (in.) 6" Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	<del>*************************************</del>	· · · · · ·				
(includes capillary fringe) Epi Endo Unknown  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				Mada and 11 1 1		V Y
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				vvetiana Hydrolo	ogy Present?	Tes_ <u>/*</u> No
		•		l a), if available:		
Remarks:		, , , p		,,		
	Remarks:					

Plot Number	HDR545	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	WD: Wetland Determination	NWI Classification	PSS3/1B	Latitude (DD)	61.87495
Plot Date	9/12/2022	НСМ	Slope	Longitude (DD)	-162.04631







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Airport Borough/City: Kuzilya	K CA Date: 9/12/7022
Applicant/Owner:_HDOT	Sampling Point#: 546
	HDR Alaska, Inc.
Lat. (dec.°) 61.874672 Long. 162.045784 ± 'NAD 83 Recorded	on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	orm: Terrace Slope (%): 10 Aspect: NE
Local relief: Shape across slope: (linear/convex/concave Shape up/downslope: ,linear/	
Photo nos./descriptions: NESW 2-50 // Camera#:	_ Veg Type (Viereck Level 4 or other): <u> </u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> significantly disturbed? Are "Normal Circu	
Are Vegetation, Soil, or Hydrology naturally problematic? In Dry Season? Ye	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No Within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3")         Species         Cov.% Dom? Ind.         Species         Cov.% Dom? Ind.           1	Number of Dominant Species That are OBL, FACW, or FAC:  (A)
2.5a = 6.	Total Number of Dominant Species Across All Strata: (B)
4 8	(0)
Total Tree Cover:  50% of total cover: 20% of total cover:	Percent of Dominant Species That are OBL, FACW, or FAC:  Prevalence Index worksheet:  (A/B)
, the	· · · · · · · · · · · · · · · · · · ·
Sapling/Shrub Stratum (woody plants < 3" dbh)  Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
1. Spi. Ste. 15 Y FACU 7.	OBL species X1=
2. Vib. edv. 3 FACU 8.	FACW species X2=
3 Vac. uli 7 FAC 9.	FAC species
4. Sal. heh. 40 Y FAC 10	FACU species / 8 X4= +2
5. Ala. ten 10	UPL + NL species X5=
6	Column Totals: <u>135</u> (A) <u>422</u> (B)
Total Sapling/Shrub Cover:	
50% of total cover: 20% of total cover: 15	Prevalence Index = B/A = 3, 13
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. <u>Cal. can.</u> 20 Y FAC 12	Hydrophytic Vegetation Indicators:
3. Eq., arv. 20 Y FAC 14.	Dominance Test is >50%
4. Aco. del. 5 FAC 15.	Prevalence Index is ≤3.0
5. Rub. arc. 7 FAC 16.	// Morphological Adaptations (Provide supporting
6. Gal. trici. 1 FACW17.	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation (Explain)
8	. resignation typic regulation (Explain)
9	1
10 21 21 22.	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22 Total Herb Cover:	To pieces a state of a pieces and a pieces a
50% of total cover: 20% of total cover:	
	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground: %  Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)  Remarks:	

Plot Number	HDR546	Wetland Status	Upland	Vegetation Type	Open Tall Alder Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	O	Latitude (DD)	61.87467
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04578







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: N

Plot Number	HDR547	Wetland Status	Wetland	Vegetation Type	Ericaceous Shrub Bog
Plot Type	FVP: Field Verification Point	NWI Classification	PSS1/EM1B	Latitude (DD)	61.87453
Plot Date	9/12/2022	ндм	Slope	Longitude (DD)	-162.04583





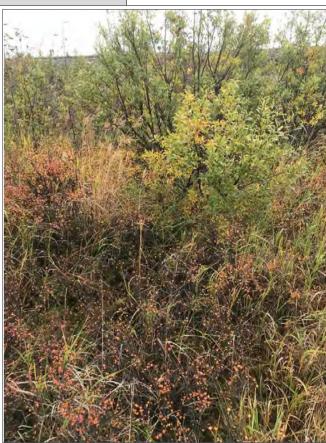


Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: S

Plot Number	HDR548	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87448
Plot Date	9/12/2022	ндм	N/A	Longitude (DD)	-162.04593

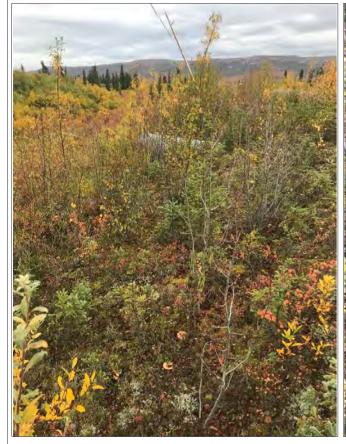






Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

Plot Number	HDR584	Wetland Status	Upland	Vegetation Type	Closed Tall Alder Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	C	Latitude (DD)	61.87636
Plot Date	9/14/2022	ндм	N/A	Longitude (DD)	-162.05591







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM	- Alaska Region	-1
Project: / VARSHALL HIRPORT Borough/City: KS/ Va	K CA	_ Date: 9/14
Applicant/Owner: ADOT		Sampling Point#: 585
Investigator(s): 2H /BC Firm:	HDR Alaska, Inc.	
Lat. (dec.°) 61.876087 Long. 162.055919 ± 'NAD 83 Recorded	on GPS?: X Market	d on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	form: Hillsile	Slope (%): 10 Aspect: SE
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/	convex/concave NW	VI classification: P351 /3 B
Photo nos./descriptions: NESW 2-50:1 Camera#:	Veg Type (Viereck Le	evel 4 or other): ZZD2
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Welle	r HGM type: Slune
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circ	umstances" present? Y	es X No
Are Vegetation , Soil , or Hydrology naturally problematic? In Dry Season?	esNo_X If nee	ded, explain answers here.
SUMMARY OF FINDINGS		e i ji sali si gorni i ji di di
Hydrophytic Vegetation Present? Yes No Is the sampled a	702	on the safety and the same of
Hydric Soil Present? Yes No within a wetland		ingular kalpu said
Wetland Hydrology Present? Yes No	Remarks (e.g., ma	irginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	an total >100%.	Parallel Committee of the Committee of t
Tree Stratum (dbh≥ 3")	Dominance Test wo	orksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant	Species
1. None 5	That are OBL, FACW	/, or FAC: (A)
2	Total Number of Dom	
3 7	Species Across All S	trata:(B)
<u></u>		
Total Tree Cover:	Percent of Dominant That are OBL, FACW	
50% of total cover: 20% of total cover:	Prevalence Index w	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cove	erof: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.		15 X1= 15
1. Kho. +m. 35 Y FACW 7.	FACW species 3	
2. Van VI, ZO Y FAC 8.	A CONTRACT OF THE PROPERTY OF	5 x3= 195
3. Emp. nig. 20 Y FAC 9. 4. Betinan 10 FAC 10.	FACU species	7 X4= 28
5. Sal. artc. 7 Prey 11.	UPL + NL species	X5= -
6 12	Column Totals: 12	
Total Sapling/Shrub Cover: 92	Column Totals	(A)(B)
50% of total cover: 46 20% of total cover: 18.4	Prevalence Index	=B/A= 2.52
Herb Stratum	r revalence index	- b/A
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Service A response	
1. Car. big 15 Y FAC 12.	Hydrophytic Vegeta	tion Indicators:
2. Car. ago, 15 Y COL 13.	1	
3	Dominance Te	
4        5        16	N	
6	data in Rema	Adaptations <sup>1</sup> (Provide supporting arks or on a separate sheet)
7 18		
8	_/_ Problematic m	ydrophytic Vegetation <sup>1</sup> (Explain)
9		
10		oil and wetland hydrology must turbed or problematic.
11 22	be present unless dis	turbed of problematic.
50% of total cover:		
Circular 1/10-ac plot or other plot dimension: 20 × 70 % of bare ground:	Hydrophytic Vegetation Y	es X No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?	- NO
(where applicable)		
Remarks:		

SOIL	A CONTRACTOR OF THE STATE OF TH	A STANSA	I do	3/100	S	ampling Point#: 185			
Profile Description: (Describe to the depth no	eeded to document the indica	tor or confirm ti	he absence	of indicato	rs)	ar Case 1			
Depth Horizon Soil Matrix	Redox Fe	Redox Features			α,α dip.	Danishin / Service			
(in.) (opt.) Color (moist) %	Color (moist) %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	(pos/ neg)	Remarks (or use comment number)			
0-7 00			_	<u>water</u> s		<u> </u>			
2-3 0e				See B		1 P. J. P. S. J. P. S. P			
3-8 B, 544/1 (a)		mu ( - Rei	- 5	100	+	Charles and a second			
8-10 B2 544/1 95	7.54R 4/0 15	C	PL, RC S	160	+	CONTRACTOR OF THE STATE OF THE			
16-00 B3 104R4/3 95	2.545/1 5	D	PL S	110	NT	CAND II (DAGE)			
The state of the s	A safety of the safety and	50km20	legic (Printer Ed	<u>Character</u>					
						CR. NAMES A DE CAL			
A Children of Arthrenia (Ass.)	y Shower -	PERSONAL PROPERTY.			1	Carlo Carlo May 2019.			
<sup>1</sup> Type: C = Concentration, D = Depletion, RM =					ining, RC =	Root Channel, M = Matrix			
Hydric Soil Indicators (check ones that apply				se noted):	- Age				
Standard Indicators:	Indicators for Pro	Particular and the Control of the Co		11		4-10			
Histosol or Histel (A1)  Histic Epipedon (A2) (8-16" organics, sat'd		ow Dark Surfac	ce (A11)	M		or Change <sup>4</sup> (TA4)			
underlain by mineral soil with chroma ≤2)	Depleted Mat	trix (F3)		14	Alaska Alp	ine Swales (TA5)			
Black Histic (A3)	Redox Dark S	Surface (F6)		N	Alaska Red	dox with 2.5Y Hue			
Hydrogen Sulfide (A4) (within 12" of mineral surface; @ " in this pit	Depleted Dar	k Surface (F7)		N		without Hue 5Y or			
Thick Dark Surface (A12)	N Redox Depre	ssions (F8)		N		Underlying Layer yl positive (see pg. 91)			
	11			1					
Alaska Gleyed (A13)		Red Parent Material (F21)  Other (Low organic matter, low pH, recently developed., see							
Alaska Redox (A14)		Very Shallow Dark Surface (F22)  Supplement; explain in Remarks)  One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an							
Alaska Gleyed Pores (A15)	One indicator of hy appropriate landsc Give details of cold	ape position mu	ust be prese	primary ind ent unless d	icator of we isturbed or p	tland hydrology, and an problematic.			
Restrictive Layer (if present)		PD	*			THE RESERVE			
Type: 10anl	Soil Map Unit Name	):	Hydric	Soil Prese	nt? Y	es No			
Depth (inches): N/A				LV IV	V				
Comments:	CONTROL OF THE PERSON OF			अति ।	M				
1.			A Y ALL MANAGEMENT						
3.	allered to the first of the	Mary San		FAL	W 1	ST WARDS BUT			
HYDROLOGY						The American			
Wetland Hydrology Indicators (check ones th		surface):	Seconda	ary Indicato	rs (at least 2	are required)			
Primary Indicators (any one indicator is sufficient		400	<u></u> Wat	er-Stained	Leaves (B9)				
The state of the s	Surface Soil Cracks (B6)		. /	nage Patte					
AI AI	Inundation Visible on Aerial II		X . D						
Saturation (A3) (w/in 12")	Sparsely Vegetated Concave	y Vegetated Concave Surface (B8)			(pos. α,α or soil color change w/in 12")				
	Marl Deposits (B15)				Nalt Deposits (C5)				
District the second of the sec	Hydrogen Sulfide Odor (C1)			Mary Company	ssed Plants	(D1)			
Drift Deposits (B3)	Dry-Season Water Table (C2 mineral, 12"-40" organic)	) (w/in 12"-24"	4 /	morphic Po					
Algal Mat or Crust (B4)	Other (explain)			llow Aquitar 24", can pe	rch H <sub>2</sub> O w/in	12")			
Iron Deposits (B5)					Microtopographic Relief (D4) (caused by water)				
			Y FAC	Neutral Te	st (D5)				
Field Observations (in. from ground surface):	V	100	1		A CITY OF				
Surface Water Present? Yes No	Depth of water (in.)								
Water Table Present? Yes No	Depth to water (in.)		- French						
and the same of th	t that depth but not yet filled?	?:	146			14			
Saturation Present? Yes No	Depth to sat. (in.)	&	Wetland	Hydrology	Present?	Yes _ No			
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitor	ring well aerial photos previ		s) if availab	( )	111				
	ing won, aonai priotos, pievi	ous maperions	oj, ii avallati			WEST DATE			
Profile very moist but not	so the tel. The	ee scran	days in	dicato	rs olici	ruel.			
Motion And ways and was	and aller !!		0		9/				

Plot I	Number	HDR585	Wetland Status	Wetland	Vegetation Type	Dwarf Shrub Tundra
Plot	t Type	WD: Wetland Determination	NWI Classification	PSS1/3B	Latitude (DD)	61.87608
Plot	t Date	9/14/2022	ндм	Slope	Longitude (DD)	-162.05592







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM - Alaska Region Project: Marshall Dirport Borough/City: Kusilvak CA Date: 9/18 Applicant/Owner: Investigator(s): ZH Lat. (dec.°) (ol. 876 77) Long. 162. 675255 ± 'NAD 83 Recorded on GPS?: X Marked on map? Field Map#: Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Valley Bottom Slope (%): 5 Aspect: W Local relief: Shape across slope: linear convex / concave Shape up/downslope: (linear convex / concave NWI classification: 853 / Em 18 Photo nos./descriptions: MESW - Z 501), Camera#: Veg Type (Viereck Level 4 or other): ZZCZa Are climatic / hydrologic conditions on the site typical for this time of year? Yes: \_\_\_\_ No: \_\_\_\_ If no, explain. Well HGM type: \_\_\_\_\_\_ No. Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circumstances" present? Yes No \_\_\_\_ Are Vegetation  $\overline{\mathcal{N}}$ , Soil  $\overline{\mathcal{N}}$ , or Hydrology  $\overline{\mathcal{N}}$  naturally problematic? In Dry Season? Yes \_\_\_ No  $\overline{\mathcal{N}}$  If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Is the sampled area Hydric Soil Present? No within a wetland? Wetland Hydrology Present? Yes Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Cov.% Dom? Ind. Species Species Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Ind. OBL species FACWT. Alm. sin. FACW species FAC 8. Salipuli FAC species FACU species UPL + NL species Total Sapling/Shrub Cover: 20% of total cover: 14.6 Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? 40 FACW12. Hydrophytic Vegetation Indicators: OBL 13. Dominance Test is >50% Prevalence Index is ≤3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 60 20% of total cover: 50% of total cover: Hydrophytic Circular 1/10-ac plot \_\_\_\_ or other plot dimension: 20x20 % of bare ground: Vegetation Present? % Cover of Wetland Bryophytes \_\_\_\_\_\_\_ % Total Cover of Bryophytes 25 (where applicable) Remarks:

SOIL	- 142 · · ·	right.						Sampling Point#: 586
Profile Description: (Describe to the dep	oth needed to	o document the	e indicato	ororconfi	rm the al	bsence of indica	ators)	ŧ
Depth Horizon <u>Soil Matrix</u>		R	edox Fea	atures			α,α dip.	
(in.) (opt.) Color (moist)	<u>%</u> (	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc	<sup>2</sup> Texture	<u>(pos/</u>	Remarks
0-5 Oi							neg)	(or use comment number)
5-10 Oe			_	<del>,</del>		_		401
10-11 A 104R3h	100					<u> </u>		
	190	- 11/2					M	
1-15 B, 544/1		54R4/6	20	<u> </u>	MPLI	QC <u>3/20</u>		
15-20 Bi 574/1	100	48br	367	2545-	9.60	2160	- deser	
						_		
				····				
			_ —					
<sup>1</sup> Type: C = Concentration, D = Depletion,	RM = Reduc	æd Matrix, CS=	-Coated	Sand Gra	ains <sup>2</sup> Loc	cation: PL = Por	e Lining, RC	= Root Channel, M = Matrix
Hydric Soil Indicators (check ones that a	apply, <b>meas</b>	ure from top of	f minera	l layers u	uniess c	otherwise noted	d):	
Standard Indicators:		Indicators for						
Histosol or Histel (A1)		_ <i>/\ldot/</i> Deplet			-		V Alaska C	Color Change⁴ (TA4)
Histic Epipedon (A2) (8-16" organics,	,sat'd,	- 4						Alpine Swales (TA5)
underlain by mineral soil with chroma	≤2)	_//_ Deplet		1.5		4		
Black Histic (A3)		<u> </u>	Dark Su	ırface (F6	)	4	🟒 Alaska F	Redox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of n surface; @ " in this pit	nineral	<u></u> ✓ Deplet	ted Dark	Surface (	F7)			ed without Hue 5Y or
				,	•	/	9 /	er Underlying Layer
Thick Dark Surface (A12)		/// Redox	Depress	sions (F8)	)		. 1	ridyl positive (see pg. 91)
<u>/</u> Alaska Gleyed (A13)		_//_ Red Pa	arent Ma	iterial (F2	1)	4	Other (Lo	ow organic matter, low iron, high ently developed., see p.91 of
📕 Alaska Redox (A14)		_// Very S	hallow D	ark Surfa	ce (F22)	)	Supple	ment; explain in Remarks)
∧ Alaska Gleyed Pores (A15)		<sup>3</sup> One indicate	or of hvd	rophyticy	/egetatio	on. one primary i	indicatorofy	vetland hydrology, and an
, , ,		appropriate l	landscap	pe positio	n must b	e present unles	s disturbed o	or problematic.
		<sup>4</sup> Give details		change i	n Remar	ks.		
Restrictive Layer (if present)		Drainage Cla	ass: 🎅	לו				\ <u></u>
Type:	<del></del>	Soil Map Uni	it Name:			Hydric Soil Pre	sent?	Yes No
Depth (inches): N/A							1	
Comments:								
1.   2.								
3.								
HYDROLOGY								
Wetland Hydrology Indicators (check on	es that apply	/ measure fre	m soil s	urfa ac \t		ocondon/Indica	tam (at laca	t 2 are required)
Primary Indicators (any one indicator is s		y, incasure iro	111 5011 51	uriace j.		<u>⊌</u> Water-Staine		
4.3		e Soil Cracks (B	) C \					
☐ Surface Water (A1)  ☐ High Water Table (A2) (w/in 12")		tion Visible on A	,	0~0m/P		Drainage Pat     Ovid'd Dhima		
7	4				· 7.	Presence of		Living Roots (C3) (within 12")
Saturation (A3) (w/in 12")	<u></u> A Sparse	ly Vegetated C	oncave S	Surface (E	38) —	(pos. a,a ors	soil color char	nge w/in 12")
✓ Water Marks (B1)	Marl De	posits (B15)			1	$\underline{V}$ Salt Deposits		
Sediment Deposits (B2)	∠ Hydrog	en Sulfide Odo	or (C1)		^	Stunted or St	tressed Plan	nts (D1)
	<u>M</u> Dry-Sea	ason Water Tal	ble (C2)	(w/in 12"-2	24"	Geomorphic	Position (D2	2)
. ,	mineral,	, 12"-40" organic	)			✓ Shallow Aqui		•
Algal Mat or Crust (B4)	Other (e)	explain)			,	(w/in 24", can		•
Non Deposits (B5)								D4) (caused by water)
						FAC Neutral	Test (D5)	
Field Observations (in. from ground surface								
Surface Water Present? Yes	No 🗶	Depth <b>of</b> wat	ter(in.) _					
Water Table Present? Yes	No	Depth to wat	ter (in.) _	9				
Seeping	g in at that d	epth but not ye	t filled?:					
Saturation Present? Yes_X_	No	Depth to sat.	. (in.) (	CO	w	etland Hydrolo	av Present	? YesX No
(includes capillary fringe)			Unkno	wn				
Describe Recorded Data (stream gauge, m	onitoring we	•			tions), if	available:		
Remarks:								
1		N _ E7	A Partie	-1				
Two primary and three	Seusni	Wy induc	W5-01	5 069		K. 1 (p)		
US Army Corps of Engineers		U					aska Version	2.0 Modified by HDR 2021

#### **Marshall Airport and Access Road Improvements**

PI	lot Number	HDR586	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
	Plot Type	WD: Wetland Determination	NWI Classification PSS3/EM1B		Latitude (DD)	61.87677
	Plot Date	9/18/2022	ндм	Slope	Longitude (DD)	-162.07525







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: S

Plot Number	HDR587	Wetland Status	Upland	Vegetation Type	Open Low Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87686
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.07505







Photo Type: Vegetation

Direction: NW

Photo Type: Vegetation

Direction: SE

Photo Type: Vegetation

Direction: W

### **Marshall Airport and Access Road Improvements**

Plot Number	HDR588	Wetland Status	Upland	Vegetation Type	Open Low Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87688
Plot Date	9/18/2022	НСМ	N/A	Longitude (DD)	-162.07486

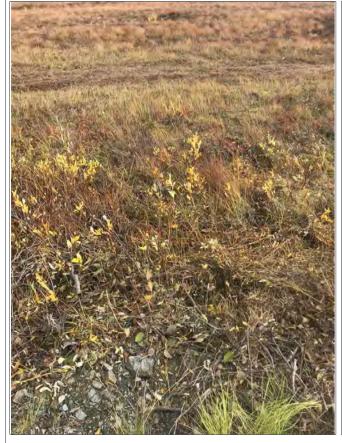






Photo Type: Vegetation

Direction: NE

Photo Type: Vegetation

Photo Type: Vegetation

Direction: SE

Plot Number	HDR589	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	FVP: Field Verification Point	NWI Classification	PSS3/EM1B	Latitude (DD)	61.87695
Plot Date	9/18/2022	НСМ	Slope	Longitude (DD)	-162.07465







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

WETLAND DETERMINATION DATA FORM - Alaska Region Project: Marshall Arport Borough/City: Kusilvak CA Date: 9/10/2022 ADOT Applicant/Owner: \_ Firm: HDR Alaska, Inc. Investigator(s): マル / R C Lat. (dec.°) (01.8 76 32 3 Long. 162.6743604 'NAD 83 Recorded on GPS?: X Marked on map? X Field Map #: Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Law manual Slope (%): 5 Aspect: NW Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/convex/concave NWI classification: P551/3 B Photo nos./descriptions: NESN - 7 50 1. Camera#: Veg Type (Viereck Level 4 or other): ORCS-IR Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes N No Are Vegetation  $\frac{N}{N}$ , Soil  $\frac{N}{N}$ , or Hydrology  $\frac{N}{N}$  naturally problematic? In Dry Season? Yes No  $\frac{N}{N}$  If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X is the sampled area Yes 🗡 Hydric Soil Present? within a wetland? Wetland Hydrology Present? Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total > 100% Dominance Test worksheet: Tree Stratum (dbh≥ 3") Species 5 2 2 Cov.% Dom? Ind. Species Number of Dominant Species That are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3"dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species FACW species FACW 8. FAC species FACU species Total Sapling/Shrub Cover: 50% of total cover: 20% of total cover: Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind. FACW12. Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is ≤3.0 16. Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 22. Total Herb Cover: 50% of total cover: 20% of total cover: \_ Hydrophytic Circular 1/10-ac plot \_\_\_ or other plot dimension: 15x/5 % of bare ground: 0 Vegetation Present? % Cover of Wetland Bryophytes \_\_\_\_\_\_% Total Cover of Bryophytes \_\_\_\_\_% (where applicable) Remarks:

SOIL  Profile Description: (Describe to the depth needed to	o document the indicator	or confirm th	e ahseni	re of indicator	e)	Sampling Point #: <u>590</u>		
Depth Horizon Soil Matrix	Redox Fea			so or indicator				
•	Color (moist) %		Loc²	Texture	α,α dip. (pos/	Remarks		
0-5 02					neg)	(or use comment number)		
5-17 00								
17-21 13 54-41 85 7	54244 15	$C \sim M$	AJAL.	SILO	-			
	·	· · ·						
		-		· · · · · · · · · · · · · · · · · · ·				
			<del>-</del>					
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Reduc	ed Matrix, CS=Coated S	Band Grains	 Location	: PL = Pore L	ining, RC=	Root Channel, M = Matrix		
Hydric Soil Indicators (check ones that apply, meas	ure from top of mineral	layers unle	ss other	wise noted):				
Standard Indicators:	Indicators for Proble			2.5				
Histosol or Histel (A1)	Depleted Below	Dark Surfac	e (A11)	<u>/v</u>	Alaska Co	lorChange⁴(TA4)		
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Depleted Matrix	(F3)	Karan Walio	<u>N</u>	Alaska Alp	ine Swales (TA5)		
AJ Black Histic (A3)	Redox Dark Sur	face (F6)		N	Alaska Re	dox with 2.5Y Hue		
Mydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit	N_ Depleted Dark S	Surface (F7)		7	AK Gleyed	I without Hue 5Y or		
M Thick Dark Surface (A12)	_/U Redox Depressi	ions (F8)		ΑĬ		Underlying Layer lyl positive (see pg. 91)		
✓ Alaska Gleyed (A13)	Red Parent Mat			. ,		organic matter, low iron, high		
Alaska Redox (A14)	Very Shallow Da	· · · · · ·	<b>-</b> 22)		pH, recer	ntly developed., see p.91 of ent; explain in Remarks)		
Alaska Gleyed Pores (A15)		•	•	e nriman ind	• • •	tland hydrology, and an		
	appropriate landscape  ⁴Give details of color of	e position mu	st be pre	sent unless d	sturbed or	problematic.		
Restrictive Layer (if present)	Drainage Class: 🖓	<b>D</b>				10		
Type:	Soil Map Unit Name:		Hydri	c Soil Prese	nt? Y	es <u>//</u> No		
Comments:								
2. 3.								
HYDROLOGY Wetland Hydrology Indicators (check ones that appl	/ measure from soil su	rface).	Second	dany Indicator	e (at least 2	2 are required)		
Primary Indicators (any one indicator is sufficient)	,, measure ir om 5011 3 a		- No.	ater-Stained L				
Surface Water (A1)      ✓ Surface	Soil Cracks (B6)		.5.1	ainage Patter				
High Water Table (A2) (w/in 12")	tion Visible on Aenal Ima	gery (B7)	N Ox	id'd Rhizosph	eres on Liv	ving Roots (C3) (within 12")		
Saturation (A3) (w/in 12") Sparse	ly Vegetated Concave S	urface (B8)	Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")					
	posits (B15)		Salt Deposits (C5)					
No Sediment Deposits (B2)	en Sulfide Odor (C1)	*, :	<u>∧</u> Stı	inted or Stres	sed Plants	(D1)		
Drift Deposits (B3)	ason Water Table (C2) (v	w/in 12"-24"	// Ge	omorphic Po	sition (D2)			
N mineral	, 12"-40" organic) explain)		Shallow Aquitard (D3)					
Iron Deposits (B5)	sapiairi)		(w/in 24", can perch H <sub>2</sub> O w/in 12")  Microtopographic Relief (D4) (caused by water)					
Ton Deposits (Do)			the first	C Neutral Tes		,,(,,		
Field Observations (in. from ground surface):		i v si j	1	1				
Surface Water Present? Yes No _X	Depth of water (in.)							
Water Table Present? Yes X No	Depth to water (in.)	15 rising						
Seeping in at that d	epth but not yet filled?:	2m						
Saturation Present? Yes X No	Depth <b>to</b> sat. (in.)	<u> </u>	Wetlan	d Hydrology	Present?	Yes <u></u> No		
(includes capillary fringe)	Epi Endo Unknov							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:	***************************************							
			#C:	4				
Plot located on law mound but	still meets	wetlar	Levi	itaia.				

Plot Number	HDR590	Wetland Status	Wetland	Vegetation Type	Open Low Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification	PSS1/3B	Latitude (DD)	61.87632
Plot Date	9/18/2022	ндм	Slope	Longitude (DD)	-162.07436







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: E Photo Type: Vegetation Direction: N

Plot Number	HDR591	Wetland Status	Upland	Vegetation Type	Open Tall Alder Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	C	Latitude (DD)	61.87641
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.07418

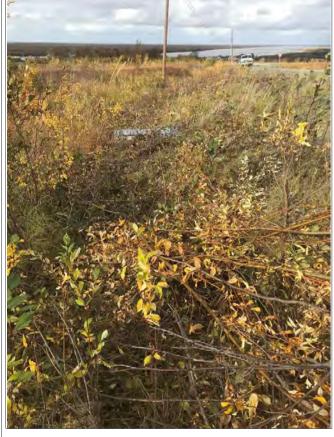






Photo Type: Vegetation

Direction: NW

Photo Type: Vegetation

Photo Type: Vegetation

Direction: SW

Plot Number	HDR592 Wetland Status Upland		Vegetation Type	Open Low Willow Shrub	
Plot Type	FVP: Field Verification Point	NWI Classification	C	Latitude (DD)	61.87489
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.06581







Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

Direction: W

# **Marshall Airport and Access Road Improvements**

	Plot Number	HDR593	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra	
	Plot Type	FVP: Field Verification Point	NWI Classification	PSS3/EM1B	Latitude (DD)	61.87491	
Plot Date		9/18/2022	НСМ	Slope	Longitude (DD)	-162.06567	







Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Plot Number	HDR594	Wetland Status	Upland	Vegetation Type	Deciduous Shrub and Sapling Regrowth
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87498
Plot Date	9/18/2022	НСМ	N/A	Longitude (DD)	-162.06554





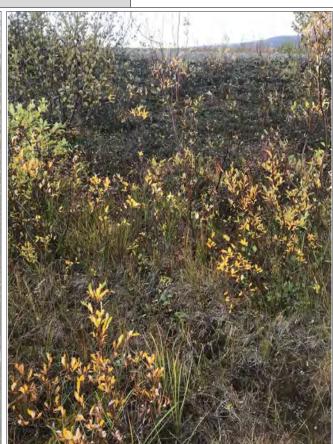


Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM -	- Alaska Region							
Project: Marshall Awport Borough/City: Kusilva	K CA Date: 9/18/2022							
Applicant/Owner: 1+DoT	Sampling Point#: 595							
	HDR Alaska, Inc.							
Lat. (dec.°) (01. 975 991 Long. 162. 049/43 ± 'NAD 83" Recorded c	on GPS?: 🔀 Marked on map? 🔀 Field Map #:							
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo								
Local relief: Shape across slope: linear / convex/ concave Shape up/downslope: linear /	convex / concave NWI classification:							
	Veg Type (Viereck Level 4 or other): OMF-IC							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:								
Are Vegetation $N$ , Soil $N$ , or Hydrology $N$ significantly disturbed? Are "Normal Circu								
Are Vegetation , Soil , or Hydrology , naturally problematic? In Dry Season? Yes No X If needed, explain answers here.								
SUMMARY OF FINDINGS	ν							
Hydrophytic Vegetation Present? Yes No X	en e							
Hydric Soil Present? Yes No Is the sampled are within a wetland?								
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):							
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car								
	Dominance Test worksheet:							
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species							
1. Pop. Ere, 15 Y FACU 5.	That are OBL, FACW, or FAC: (A)							
2. Pic. sla. 15 Y FACU 6.	Total Number of Dominant							
3. Bet. pap. 10 Y. FACUT.	Species Across All Strata: (B)							
4 8								
Total Tree Cover: 46	Percent of Dominant Species 4/5 /							
7 a	That are OBL, FACW, or FAC:							
20% of total cover.	Prevalence Index worksheet:							
Sapling/Shrub Stratum (woody plants < 3"dbh)	Total % Cover of: Multiply by:							
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=							
1. Alm Sin. 5 HAC 7. Yic. gla, 7 Y MCW 2. Vac. Uli. 15 Y FAC 8. Rhn Jone, 3 FACW	FACW species 3 x2= 6							
3. Vac. vit. 5 FAC 9.	FAC species 50 X3= /50							
4. Fmo. Nig. 7 Y FAC 10.	FACU species (0 X4= 240							
5. Bet. Gla. 15 Y FAC 11.	UPL + NL species							
6 Bet, pap. 5 FACU12	Column Totals: //3 (A) 396 (B)							
Total Sapling/Shrub Cover: <u>62</u>								
50% of total cover: 3 / 20% of total cover: /2.4	Prevalence Index = B/A = 3.50							
Herb Stratum								
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.								
1. Spin ann. 5 Y FACU 12.	Hydrophytic Vegetation Indicators:							
2. Cal. can. 3 Y FAC 13.								
3. Charaby. 3 Y FACU14.	Dominance Test is >50% Prevalence Index is ≤3.0							
4								
5.     16.       6.     17.	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)							
*7 18								
8	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)							
9								
10	<sup>1</sup> Indicators of hydric soil and wetland hydrology must							
11	be present unless disturbed or problematic.							
Total Herb Cover:								
50% of total cover: 5.5 20% of total cover: 2.2	Hydrophytic							
Circular 1/10-ac plot or other plot dimension: 20 x 20 % of bare ground: 20 -1.4	Vegetation Yes No							
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	riesenti							
(where applicable) Remarks:								
· commen								

SOIL STATE OF THE PROPERTY OF					Sampling Point#: 595
Profile Description: (Describe to the depth need	and the control of the settle of the		he absence of indica	tors)	
Depth Honzon <u>Soil Matrix</u>	Redox Fea	tures		α,α dip.	
(in.) (opt.) Color (moist) %	Color (moist) %	Type <sup>1</sup>	Loc <sup>2</sup> Texture	( <u>pos/</u> neg)	Remarks (or use comment number)
0-2 00	<del></del>				
4-10 14 1040 Z/Z	14, 1		SILO		
0-16 104R3/4 30			- 5/LD		
1042412 20	<u> </u>		J SILO		****
104124/4	<u> </u>		- SALO		30% govel
				` <u> </u>	0
,, to to					
	•				
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Re					C = Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, m				l):	
Standard Indicators:	Indicators for Proble	-			
Histosol or Histel (A1)  Histic Epipedon (A2) (8-16" organics, sat'd.	Depleted Below		ce (A11)	∠_ Alaska (	Color Change⁴ (TA4)
underlain by mineral soil with chroma ≤2)	Depleted Matrix	(F3)	_^	👤 Alaska /	Alpine Swales (TA5)
Black Histic (A3)	Nedox Dark Sui	rface (F6)		√ Alaska I	Redox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of mineral	Nepleted Dark	Surface (F7)		🗾 AK Gley	ed without Hue 5Y or
surface; @" in this pit Thick Dark Surface (A12)	100	*	A	Si .	der Underlying Layer
	Redox Depress	• •			ridyl positive (see pg. 91)
Alaska Gleyed (A13)	Red Parent Mai	• •		pH, re	ow organic matter, low iron, high cently developed., see p.91 of
Alaska Redox (A14)	_∕V Very Shallow Da	ark Surface (	F22)	Supple	ement; explain in Remarks)
Alaska Gleyed Pores (A15)	³One indicator of hydi appropriate landscap ⁴Give details of color o	e position mu	ust be present unless	ndicator of s disturbed	wetland hydrology, and an or problematic.
Restrictive Layer (if present)	Drainage Class: いっ				
Type: Wind	Soil Map Unit Name:		Hydric Soil Pres	sent?	Yes No
Depth (inches): N/A					
Comments:					
1. 2.					
3.					
HYDROLOGY					
Wetland Hydrology Indicators (check ones that a		ırface):	Secondary Indica		
Primary Indicators (any one indicator is sufficient)			<u></u> Water-Staine	dLeaves (E	39)
	face Soil Cracks (B6)	· ·	Drainage Pat		
	ndation Visible on Aerial Ima				Living Roots (C3) (within 12")
	arsely Vegetated Concave S	Surface (B8)	Presence of F (pos. o,o or s		
	1 Deposits (B15)		<u> </u>	(C5)	·
	lrogen Sulfide Odor (C1)		<u> </u>	ressed Plai	nts (D1)
N Drift Deposits (B3)	-Season Water Table (C2) ( eral, 12"-40" organic)	w/in 12"-24"	<u>N</u> Geomorphic I	•	2)
	er (explain)		Shallow Aquit (w/in 24", can	ard (D3)	(in 10")
<u>∧</u> Iron Deposits (B5)	(		4 3		(D4) (caused by water)
(20)			N FAC Neutral 7		,
Field Observations (in. from ground surface):					
Surface Water Present? Yes No	Depth <b>of</b> water (in.)	******************			
Water Table Present? Yes No _X	Depth <b>to</b> water (in.)				
Seeping in at th	at depth but not yet filled?:				
Saturation Present? Yes No _X	Depth <b>to</b> sat. (in.)		Wetland Hydrolog	y Present	1? Yes No <u>\</u>
(includes capillary fringe)	Epi Endo Unknov				
Describe Recorded Data (stream gauge, monitoring	g well, a enal photos, pr <mark>evi</mark> ou	s inspection:	s), if available:		
Remarks:	<del></del>				
	, 5		**		
			3		

# **Marshall Airport and Access Road Improvements**

Plot Number	Plot Number HDR595  Plot Type WD: Wetland Determination		Upland	Vegetation Type	Open Mixed Forest
Plot Type			U	<b>Latitude (DD)</b> 61.87588	
<b>Plot Date</b> 9/18/2022		ндм	N/A	Longitude (DD)	-162.04914







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: N Photo Type: Vegetation Direction: W

Λα	Λ.	WEILAND				, ,	Alaska Region		a1 .
Project: Wasshall	HILD	nrt	Bon	ough/Cit	y: <u>K∪5</u>	5/ Jul	CA	Date:	11/8 /2027
Applicant/Owner: ADC				er serier end			-	Sampling	Point#: 596
Investigator(s): ZA/BC			···			Firm: F	IDR Alaska, Inc.		
Lat. (dec.°) 6/ 87558	<i>34</i> l	ong. <u>//22, 01</u>	50274 ±	' NA[	083 Re	corded o	n GPS?: X Ma	rked on map? $\geq$	Field Map #:
Subregion (circle one): SE	Southce	entral Western	Aleutian Ir	nterior N	lorthern	Landfo	m: Hillside:	Slope (%):	<u> </u>
Local relief: Shape across sl									
Photo nos./descriptions:	ESW	- 250,	1	Ca	mera#:_		Veg Type (Viered	k Level 4 or oth	er): <u>のいてら-迎</u>
Are climatic / hydrologic con	ditions on	the site typical	for this time of	year? Y	'es:	No: 🔀	_ If no, explain.	effer HGM type	e: 5/0pc
Are Vegetation ${\textstyle \!$									
Are Vegetation <u>N</u> , Soil <u>N</u>	<u>J</u> , or Hyd	Irology <u>//</u> na	turally problem	natic? In	Dry Sea	son? Ye	sNo_—Xlfr	needed, explain	answers here.
SUMMARY OF FINDING	S								
Hydrophytic Vegetation Pr	esent?	Yes_ <u>/</u>	No	le	tho cam	pled are	14 A. 24 24		
Hydric Soil Present?		Yes X	· · No			vetland?	. Y	No	
Wetland Hydrology Preser	ıt?	Yes_X	No				Remarks (e.g.,		
VEGETATION (Use scient	ific names	s.) Estimate ab	solute % cover	(not rela	tive cove	er). % car	total >100%.		
							Dominance Test	worksheet:	
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.%	Dom?	Ind. Spec	ies	Cov.%	Dom?	Ind.	Number of Domin	ant Species	/
1. None		• •					That are OBL, FA		(A)
2	_						Total Number of D	Dominant	/
3		<u> </u>		. —	-		Species Across A	ll Strata:	(o(B)
4		8	- warman was a same		***************************************				
	Tota	al Tree Cover:					Percent of Domin		100
50% of total cover:			20% of total	cover			That are OBL, FA		_/ O O (A/B)
Sapling/Shrub Stratum (wo	ody plant	 s < 3"dhh)	20 /0 01 total t						Marietin barbara
Abs.Cov.%		Ind.	Abs	s.Cov,%	Dom?	Ind.	Total % C	overoi:	Multiply by:
1. Saliala, 20	Y		, dom.	3_		FACIN	OBL species _	20	X1=
2. Salarb. 15	Y	FACW 8.50;	·541			FACU	FACW species _	<u> </u>	X2= <u>56</u>
3. <u>Salipuli, 10</u>	X.	ACW 9. Bed	.pap.	_5_		FACU	FAC species _	<u> </u>	$X3 = \frac{/ + 4}{}$
4. Pic. sla / 5	<u> </u>	FACU 10. 1/20	<u>"ha"   ,                                    </u>	3_		FACU	FACU species _	14	X4=
5. Va C. úli. 10		<u>t'AC</u> 11. <u>"</u> FAC 12.					UPL + NL species	s _ <i>O</i>	X5=
6. Aln. S.h. 3		0343	15		***************************************		Column Totals:	<u>/00</u> (A)	<u> 286 (B)</u>
		Shrub Cover:	<u>15                                    </u>		مسبع ا			+1	1999 T. S.
50% of total cover:		<u> </u>	20% of total of	cover:	12		Prevalence In	dex = B/A =	2.86
Herb Stratum									
Abs.Cov.%		Ind. AC 12		Cov.%	Dom?	Ind.	1940 · ·		
2. Egs. av. 10	V 1	AC 13					Hydrophytic Veg	etation Indicat	ors:
3.	,				***************************************		Dominance	e Test is >50%	
4		15					Prevalence	e Index is ≤3.0	¥
5	<u> </u>						A/ Morpholog	ical Adaptations	1 (Provide supporting
6		17	•						separate sheet)
7							N Problemat	ic Hydrophytic V	egetation¹(Explain)
8									
9							1 Indicators of hud	rio goil and watk	and hydrology must
11		22.		***************************************			be present unless	disturbed or pr	oblematic.
		Herb Cover:	25		<u> </u>			-	
50% of total cover:	10	15	20% of total c	over:	5		Hydrophytic		
Circular 1/10-ac plot or					round:24	)-/;++en	Vegetation	Yes_X	_ No
% Cover of Wetland Bryoph			Total Cover of E	_		> %	Present?		_
(where applicable)				- 1					
Remarks:									

SOIL	. 200			100	Mary .		Sampling Point#: 5960
Profile Description: (Describe to the depth needed to	o document the in	dicator	orconfi	m the a	bsence of indicat	ors)	
Depth Honzon <u>Soil Matrix</u>	Red	ox Feat	tures		- 2	α,α dip.	
The second secon	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc	<sup>2</sup> Texture	(pos/	Remarks_
6-1 07						neg)	(or use comment number)
1=5 B. 2.54 4/1 15 7.	SYR 3/4	<		M.F.	1 / 100000		1290000
7.5T 4/3 80	31.5.79		<u> </u>	101/1	<u>L</u>		1070 710 X
	54R 4/4	25		As 21	0, 51/12		
15-20 Oeb -	7 112 114	h11 -d		MILL !			
		480		Attala	_	Phinagas same	
		-			-		
		-					
<u> </u>		—					
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Reduc				<u>-</u>			C = Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, meas						):	
Standard Indicators:	Indicators for			-	and the second s		
M Histosol or Histel (A1)	_ <i>N</i> _Depleted	Below	Dark Su	rface (A	.11) <u>/</u>	Alaska C	Color Change⁴ (TA4)
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	_ <u>M</u> Depleted	Matrix	(F3)			Alaska A	Alpine Swales (TA5)
M Black Histic (A3)	_N Redox D	ark Sur	face (F6)	)	/	V Alaska F	Redox with 2.5Y Hue
N Hydrogen Sulfide (A4) (within 12"of mineral			-	~		1	ed without Hue 5Y or
surface; @" in this pit	_N_ Depleted	DarkS	surface (	F7)			er Underlying Layer
Thick Dark Surface (A12)	_N_ Redox D	epressi	ions (F8)		<u> </u>	α,α-dipy	ndyl positive (see pg. 91)
Alaska Gleyed (A13)	_ Ned Pare	ent Mate	erial (F2	1)		🖊 Other (L	ow organic matter, low iron, high
X Alaska Redox (A14)	Very Sha		•		١	pH, red	cently developed., see p.91 of ment; explain in Remarks)
Alaska Gleyed Pores (A15)				-	A.		•
Alaska Gleyeu Poles (A15)	appropriate lar	ndscape	opnylic v e positiol	regetati n must b	en, one primary ir e present unless	disturbed o	vetland hydrology, and an or problematic.
	⁴Give details of						
Restrictive Layer (if present)	Drainage Class	s: 5P	D				
Type: //bw/	Soil Map Unit N	Varne:		I	Hydric Soil Pres	ent?	Yes No
Depth (inches):							•
Cornments:						*	
			<i>i</i> .	4	- 4		304
3. Loan horizon could be fill from	n adjacent	road	/mut	rial:	5,4e.		
HYDROLOGY	,		7				
Wetland Hydrology Indicators (check ones that apply	/. measure from	soil su	rface):	S	econdary Indicat	ors (at leas	at 2 are required)
Primary Indicators (any one indicator is sufficient)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0000	<b></b>	<u> </u>	<u>√</u> Water-Staine		:
	Soil Cracks (B6)			<i>∠</i> .	Drainage Patt	•	•
	tion Visible on Ae		aery (B7	$\overset{\smile}{\mathbb{X}}$			Living Roots (C3) (within 12")
	ly Vegetated Con			· X	Presence of R	•	
	_	icave 5	unace (c	o) 7	(pos. α,α ors		nge`w/in 12")
	posits (B15)			<u>'</u>	Salt Deposits	. ,	· V.
· · · · · · · · · · · · · · · · · · ·	en Sulfide Odor (			<u>I`</u>	Stunted or Str		* . *
<u>N</u> Drift Deposits (B3)	ason Water Table , 12"-40" organic)	e (C2) (v	w/in 12"-2	4"	f v		e)-Contabl
Algal Mat or Crust (B4)  Other (6					N Shallow Aquit (w/in 24", can p		/in 12")
Iron Deposits (B5)		ā+.		A		-,	(D4) (caused by water)
Ton beposits (bb)				1	FAC Neutral T		
Field Observations (in. from ground surface):							
Surface Water Present? Yes No X	Depth of water	(in.)	N/A	'			
Water Table Present? Yes X No	Depth to water	(in.)	/ (				
Seeping in at that d	-		10				
Saturation Present? Yes X No	Depth <b>to</b> sat. (ii	· management	-11	100	etland Hydrolog	nı Brasant	? Yes No
(includes capillary fringe)		Unknov		"	enana nyarolog	iy rieseiii	ir ies/\No
Describe Recorded Data (stream gauge, monitoring we				tions), if	available:		
		F 1 - 1 - 1		,			
Remarks:							

Plot Number	HDR596	Wetland Status	7,7		Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	NWI Classification			61.87598
Plot Date	9/18/2022	ндм	Slope	Longitude (DD)	-162.05027







Photo Type: Soils Direction: NA Photo Type: Vegetation Direction: S Photo Type: Vegetation Direction: W

Plot Number	HDR597	Wetland Status	Upland	Vegetation Type	Open Low Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87593
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.05029

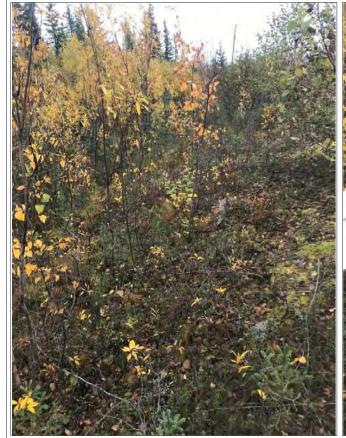






Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DA	TA FORM - A	Alaska Region	, ,
Project: Musha A. / part Borough/City:	Lusilval	L CA	Date: 9/18/2022
Applicant/Owner: ADOT*	AND:		Sampling Point#: 598
Investigator(s): ZH/BC		R Alaska, Inc.	
Lat. (dec. °) 61.875691 Long. 162, 0509 08 ± NAD 83			
Subregion (circle one): SE Southcentral Western Aleutian Interior North		and the state of t	
Local relief: Shape across slope: / Inear/ convex / concave Shape up/downs			
Photo nos./descriptions: NESW - 2-501 Came	ra#:	Veg Type (Viereck Lev	/el 4 orother): <u>OVVV ドープC</u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes:			
Are Vegetation , Soil , or Hydrology , significantly disturbed? Are		to at	•
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic? In Dry	/Season? Yes	No X If need	ed, explain answers here.
SUMMARY OF FINDINGS			
	sampled area		h./^
1 % . 1	in a wetland?	Yes No _	
Wetland Hydrology Present? Yes No	:	Remarks (e.g., mar	ginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative		total >100%. Dominance Test wor	la baati
Tree Stratum (dbh≥ 3")		Dominance restwor	ksneet:
Species Cov.% Dom? Ind. Species Cov.% Do		Number of Dominant S That are OBL, FACW,	
1. Pic. gla. 20 1 FACUS.			
2. Bet. pap. 20 Y FACU6	E .	Total Number of Domin Species Across All Str	
4 8		•	(B)
Total Tree Cover: 40		Percent of Dominant S	Species /*/
2	_	That are OBL, FACW,	or FAC: 50 (A/B)
50% of total cover: 20% of total cover:	8.0	Prevalence Index wo	rksneet:
Sapling/Shrub Stratum (woody plants < 3" dbh)		Total % Cover	rof: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Do 1. Sal. 500, 15 Y FAC 7	om? Ind.	OBL species	O X1=O
2. Pic Sta. 3 FACU 8.		FACW species	೨ X2= <u></u>
3. Bet pape 10 Y FALU 9.		FAC species3	5 x3= 105
4. <u>Con telo.</u> 1 10		FACU species5	8 x4= <u>232,</u>
5		UPL + NL species(	O X5=O
6 12		Column Totals:	$\frac{3}{4}$ (A) $\frac{290}{4}$ (B)
Total Sapling/Shrub Cover: 28			2 14
50% of total cover: 20% of total cover:	):6	Prevalence Index =	=B/A = 3.12
Herb Stratum			
Abs.Cov.% Dom? Ind. Abs.Cov.% Do			
2. Cal. can. 10 Y FAC 13.		Hydrophytic Vegetati	on Indicators:
3. Equ. arv, 10 Y FAC 14.		Dominance Tes	
4. Cha. ans.   FACU 15.		Prevalence Ind	ex is ≤3.0
5. Car. Cc. vi		Morphological /	Adaptations <sup>1</sup> (Provide supporting
17.		data in Remai	rks or on a separate sheet)
7 18 19		∕V_ Problematic Hy	drophytic Vegetation <sup>1</sup> (Explain)
9 20			
10 21		1 Indicators of hydric so	oil and wetland hydrology must
11		be present unless dist	urbed or problematic.
Total Herb Cover: 25	7 0		
		Hydrophytic	🗸
Circular 1/10-ac plot or other plot dimension: _20x20 % of bare grounds	und. <u>201 11170</u> 7	Vegetation Ye Present?	es No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes (where applicable)	%	- · · · · · · ·	
Remarks:		L	
			!

SOIL		11 9 1			Sampling Point#: 598
Profile Description: (Describe to the depth needed	to document the indicato	r or confirm the	absence of indicat	ors)	
Depth Horizon <u>Soil Matrix</u>	Redox Fea	tures		α,α dip.	
(in.) (opt.) Color (moist) %	Color (moist) %	Type <sup>1</sup> L	oc² <u>Texture</u>	(pos/	_Remarks_
6-1 0e				neg)	(or use comment number)
1-7 10485/4 35	*	emerch, see	CRLO	*****	2
INVR 4/10 Los		flancoura"	GRLO		
7-20 7,5 4R 3/2 78 7	5YR 3/4 7		5/10		
1000 41.	1011114		<u> </u>		
1	4				
<sup>1</sup> Type: C = Concentration, D = Depletion, RM = Redu					Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, mea		-	•	:	
Standard Indicators:	Indicators for Proble	-		•	
Histosol or Histel (A1)	Depleted Below	v Dark Surface	(A11) /	_ Alaska Co	olor Change⁴ (TA4)
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Depleted Matrix	(F3)	<u>/\/</u>	_ Alaska Al <sub>l</sub>	oine Swales (TA5)
Black Histic (A3)	Nedox Dark Sui	face (F6)	N	Alaska Re	dox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of mineral	4.	, ,	A	<del>/</del>	d without Hue 5Y or
surface; @" in this pit	<u></u> Depleted Dark S	Surface (F7)		_ AR Gleyer Redde	r Underlying Layer
M Thick Dark Surface (A12)	Medox Depress	ions (F8)	1	8	dyl positive (see pg. 91)
Alaska Gleyed (A13)	Red Parent Mat	terial (F21)	Λ.	Other (Lov	v organic matter, low iron, high
Alaska Redox (A14)	- L			pH, rece	ntly developed., see p.91 of
1.1	Very Shallow Da	•	•	• • •	ent; explain in Remarks)
<u> </u>	One indicator of hydi appropriate landscap				etland hydrology, and an
	⁴Give details of color			a is tall be a Oi	problematic.
Restrictive Layer (if present)	Drainage Class: 🛝			,	-
Type: /Unl	Soil Map Unit Name:		Hydric Soil Pres	ent?	Yes No X
Depth (inches): 10/19	. '			4.1	
Comments:			2- 2-		
1.					
3. No primary h. dro for problem	Le car L	- N 11- 1	1.2.3 /1	. D 11	
3. No primary h, 200 for problem	MULLINALLITON	15 4 1VO h	ydrophytic v	COLAND TO	M IAM CAPOLS
HYDROLOGY					
Wetland Hydrology Indicators (check ones that app	ly, measure from soil su	ırface):	Secondary Indicate	ors (at least :	2 are required)
Primary Indicators (any one indicator is sufficient)			Mater-Stained	Leaves (B9	)
	ce Soil Cracks (B6)		M Drainage Patte	ems (B10)_	
High Water Table (A2) (w/in 12")	ation Visible on Aerial Ima	agery (B7)	7		ving Roots (C3) (within 12")
Saturation (A3) (w/in 12")	ely Vegetated Concave S	urface (B8)	Presence of R (pos. α,α or so	educed Iron	(C4) a w/in 12")
Water Marks (B1) Mart D	eposits (B15)		✓ Salt Deposits (	_	6 W/III 12 )
	gen Sulfide Odor (C1)		M Stunted or Str	-	s (D1)
A   D 0	eason WaterTable (C2) (	w/in 12"-24"	M Geomorphic P		
minera	al, 12"-40" organic)		M Shallow Aquita		
Algal Mat or Crust (B4)	(explain)		(w/in 24", can p		12")
N Iron Deposits (B5)			Microtopograp	hic Relief (D	4) (caused by water)
			Neutral Te	est (D5)	
Field Observations (in. from ground surface):					
Surface Water Present? Yes No _X	Depth <b>of</b> water (in.)				
Water Table Present? Yes No	Depth to water(in.)_				
Seeping in at that	depth but not yet filled?:		11.00		<b>4.</b> .
Saturation Present? Yes No	Depth <b>to</b> sat. (in.)		Wetland Hydrolog	v Present?	Yes No
(includes capillary fringe)	Epi Endo Unknov	wn			
Describe Recorded Data (stream gauge, monitoring w			, if available:		
		•			
Remarks:			,		
	· 1 · / -	1	1		
IND Primers or secondary	indica tors	OUSERV	<u> </u>		

Plot Number	HDR598	Wetland Status	Upland	Vegetation Type	Open Mixed Forest
Plot Type	WD: Wetland Determination	NWI Classification	U	Latitude (DD)	61.87569
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.05071







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

# **Marshall Airport and Access Road Improvements**

Plot Number	HDR599	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Type	FVP: Field Verification Point	NWI Classification	PSS3/EM1B	Latitude (DD)	61.87566
Plot Date	9/18/2022	ндм	Slope	Longitude (DD)	-162.05099







Photo Type: Soils

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

Plot Number	HDR600	Wetland Status	Upland	Vegetation Type	Closed Tall Alder Willow Shrub
Plot Type	FVP: Field Verification Point	NWI Classification	U	Latitude (DD)	61.87569
Plot Date	9/18/2022	ндм	N/A	Longitude (DD)	-162.05084







Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

# **Submission Complete**

# **CWA 401 Prefiling Meeting Request**

Site: Marshall Airport Improvments Submission HPP-MNRB-19FHH Revision 1 Form Version 1.18



# Department of Transportation and Public Facilities

NORTHERN REGION Design & Engineering Services

2301 Peger Road Fairbanks, AK 99709-5316 Main: 907-451-2273 Fax: 907-451-5126 TDD: 907-451-2363

dot.alaska.gov

January 4, 2023

Shannon Morgan, Northern Branch Chief U.S. Army Corps of Engineers-Alaska District, Regulatory Division JBER, P.O. Box 6898 Anchorage, AK 99506-0898

Email: regpagemaster@usace.army.mil

Subject: Marshall Airport Improvements, State Project No. NFAPT00371

**Individual Permit Application** 

Dear Ms. Morgan:

The Alaska Department of Transportation and Public Facilities (DOT&PF) requests an Individual Permit for the Marshall Airport, to support the Marshall Airport Improvements Project (No. NFAPT00371). Attached you will find an application (Attachment 1), and project figures (Attachment 2) with this letter.

#### Purpose and Need:

The DOT&PF proposes to improve the Marshall Airport in Marshall, Alaska (Figure 1).

The purpose of the proposed project is to rehabilitate the runway to meet FAA standards and reestablish safe and efficient surfacing for aviation operations. Minimal surfacing remains, exposing the subbase and increasing safety concerns. Shoulders have significant slope failures, which reduces the runway safety area below standard 150-foot width per FAA AC 150/5300-13B. The airport lighting system is beyond its projected 20-year useful life and has experienced prolonged outages due to system failures, requiring increasing levels of maintenance to remain operable. The airport access road has failing culverts and sections which become soft during wet season making access to the airport less reliable. Road rehabilitation will re-establish reliable access to the airport. The existing Snow Removal Equipment Building (SREB) does not meet current building codes for the fuel storage, has a gravel floor, and other components require increasing levels of maintenance. Upgrading the fuel tanks to current standards and installing a concrete floor reduces contamination potential. Upgrading electrical heating and repainting siding extends the useful life and reduces maintenance costs. The overall need for the proposed action is to maintain the existing level of safe, reliable year-round air access to the community of Marshall.

### **Project Description:**

The project consists of the following work:

- Rehabilitate the existing runway, taxiway, and apron.
- Reconstruct failing embankment shoulders and flatten slopes. Re-establish as-built drainage and re-grade ditch on the south side of the runway.
- Rehabilitate and widen the airport access road by up to approximately 4 feet. The existing road varies from 14-foot to 18-feet wide and will be widened to a consistent 18 feet wide.
- Replace approximately 12 existing drainage culverts along the airport access road in approximately the same location and depth. (Figures 2-3; culvert locations are in yellow).
   Work on the Wilson Creek bridge will be on the roadway embankment and not involve inwater work.
- Replace FAA runway end identifier lights (REILs) (in the same locations.)
- Replace airport lighting, segmented circle, and navigational aids.
- Rehabilitate the existing SREB and pad.

Project work limits consists of the disturbed footprint of the runway, taxiway, apron, access road and embankments. There may be limited amount of work beyond the existing embankments.

### Material Sites and Construction Access

Materials and staging areas for this project are anticipated to be contractor furnished. All required clearances and permits for material sites will be secured before construction begins.

### **Estimated Project Duration**

The proposed project will take place between summer 2023 and fall 2024.

<u>Section 404 Involvement:</u> The proposed project area, composing of the airport and the airport access road, was surveyed by Stantec Inc. in September of 2022. *Marshall Airport Improvements: Wetland and Waters Delineation Report* (Attachment 3) and found to be roughly 50% wetlands, predominantly freshwater emergent (PEM1/SS1B).

Project work area primarily involves the disturbed footprint of the runway, taxiway, apron, access road and embankments. Work beyond the existing road and airport embankment structures will result in permanent impact to an estimated 9.7 acres of wetland from placement of approximately 75,800 cubic yards (CY) of clean fill material. Permanent impacts will predominantly affect deciduous scrub-shrub (PSS1) and freshwater emergent (PEM1) wetland types (Table1). An estimated 10 acres of temporary wetland impacts will result from work area around the embankment fill along with a vegetative buffer serving as a storm water BMP.

Table 1. Wetland Impacts

Cowardin Type	Permanent Impact (acres)	Temporary Impact (acres)
PEM1C	2.3	0.1
PEM1F	2	1
PSS1/3B	0.2	0.3

PSS1/EM1B	3.5	5.2
PSS1/EM1C	0.7	0.6
PSS1B	0.2	0.1
PSS1C	0.1	0.1
PSS3/1B	0.1	0.2
PSS3/EM1B	0.6	2.4
TOTAL	9.7	10

#### Avoidance and Minimization

Due to location of airport property, surrounding wetlands and waters of the U.S., complete avoidance of wetland impacts is not possible. The proposed project will result in unavoidable permanent impacts to approximately 9.7 acres of wetlands and Waters of the U.S. The proposed construction project will temporarily impact 10 acres of wetlands. Proposed temporary wetland impacts include a 25-foot buffer in places and 10-foot buffer in others of anticipated wetland impacts during construction. More details of avoidance and minimization can be found in the attached supplemental information.

#### Mitigation

Compensatory wetland mitigation is not proposed for this project. Given the avoidance and minimization measures incorporated into the project, compensatory mitigation for the remaining unavoidable impact is not appropriate or practicable.

Should you have any questions or need additional information, please contact Melissa Jensen, DOT&PF Environmental Analyst, at (907) 451-5377 or via email, at melissa.jensen@alaska.gov. You may also contact me directly at (907) 451-2238 or brett.nelson@alaska.gov.

### Section 106 and ESA

Brett D Nelson

Section 106 findings of No Historic Properties Affected concurrence from SHPO is attached, and no ESA listed species are in the project area (attached).

Sincerely,

**Brett Nelson** 

Northern Region Environmental Manager

**Enclosures:** 

Attachment 1: 2022 USACE Individual Permit Application

Attachment 2: 2022 Figures

Attachment 3: Wetland Delineation Report

Attachment 4: Section 106 Concurrence / ESA No Effect Determination

cc: Christopher Johnston, Northern Region DOT&PF Project Manager

Brett Nelson, Northern Region Environmental Manager

Melissa Jensen, Northern Region DOT&PF Environmental Analyst

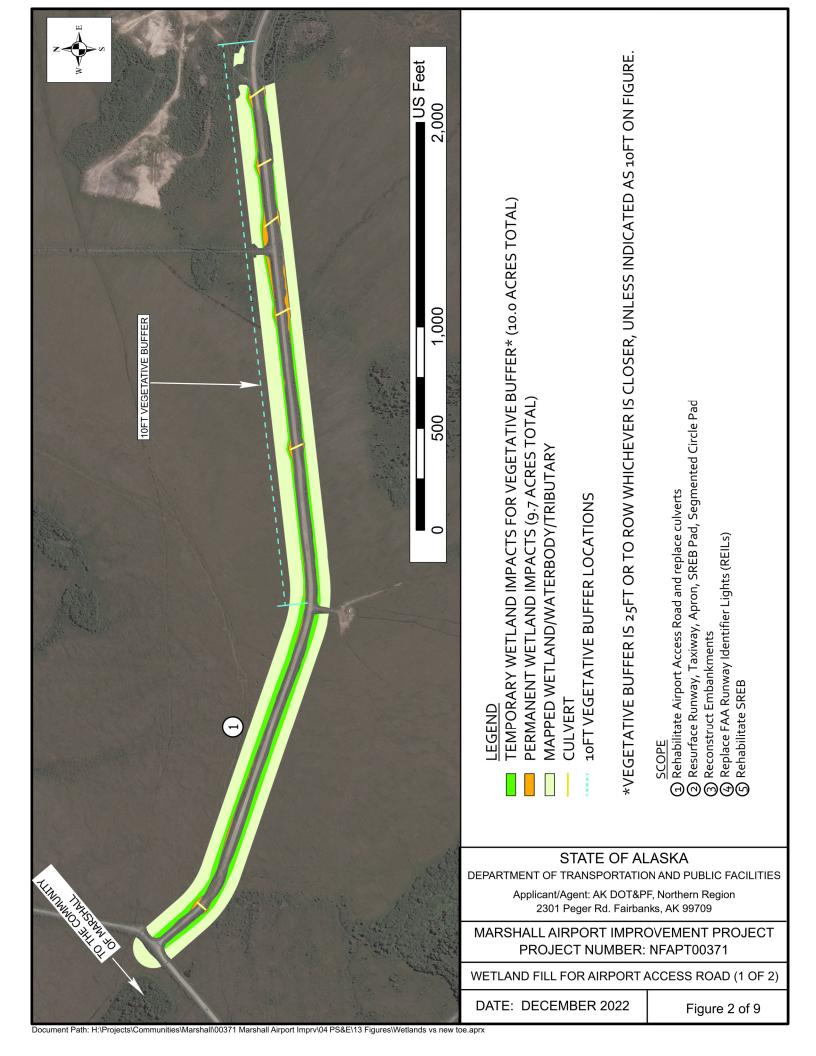
### **Supplemental Information**

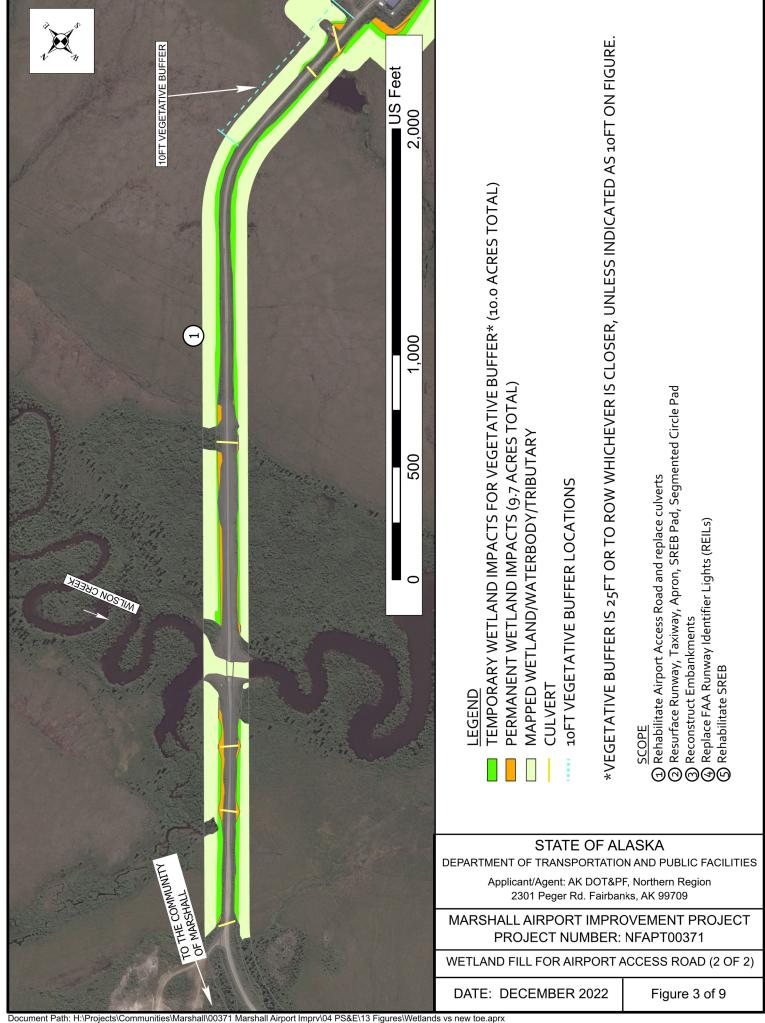
### Block 23: Avoidance, Minimization and Compensation

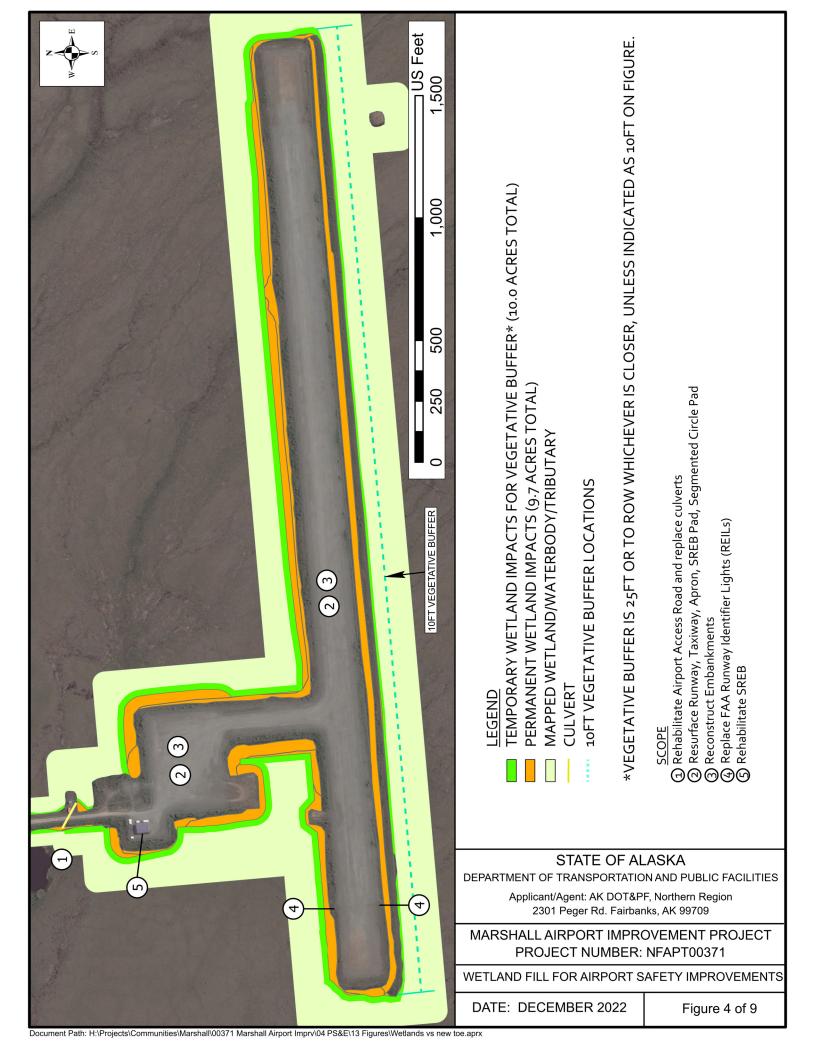
- Due to location of airport property, surrounding wetlands and waters of the U.S., complete avoidance of wetland impacts is not possible. The proposed project will permanently impact 9.7 acres of unavoidable wetlands and Waters of the U.S. It is estimated that construction of the project will temporarily impact 10.0 acres of wetlands and Waters of the U.S. The proposed temporary wetland impacts include a 25-foot vegetated buffer in places and 10-foot work buffer in others.
- Original design considered extending the Snow Removal Equipment Building (SREB) pad to fit fuel tanks and a fence behind the building. This option to expand the SREB pad was taken out of consideration in order to reduce wetland impacts in the overall project.
- The project design calls for 5:1 slopes on embankments. These flatter slopes will be more stable than the steeper existing slopes, resulting in less erosion runoff over the life of the facility. After more consideration, slopes on embankments were reduced to 3:1 in order to reduce the overall wetland impacts.
- The existing FAA Navigational Aids (NAVAIDs) power and control conduits are located in wetlands. These conduits will be abandoned in placed and the new conduits will be placed within the airport embankments, resulting in a much smaller overall wetland impact. Removing the Precision Approach Path Indicators (PAPI) pad instead of reconstructing it will minimize wetland impacts as well
- A wind cone at the east end of the runway will be removed under the project. The foundation of metal and concrete will be removed and dirt will be left in place. This will reduce wetland impacts as a new wind cone will not be installed. There will be no trenching or additional fill as a result, reducing the overall wetland impacts.
- All culverts replacements will be with larger culverts, providing an overall improvement to hydraulic
  function. Riprap inlet and outlet protection will be added to reduce erosion. Proper BMPS during
  construction will ensure no additional impacts. Wetland impacts will be avoided by not construction a
  staging area in undisturbed wetlands. The project avoided additional impacts to wetlands by maintaining
  the existing road and airport alignment.
- The airport runway shoulders are sloughing resulting in significant longitudinal cracking and settling. Inattention to this problem will result in impact to the runway and significant future M&O costs. The overall need for the proposed action is to maintain the existing level of safe, reliable year-round air access to the community of Marshall. The community relies greatly on the air travel for the transport of good and medical services.
- Further wetland impacts will be avoided and minimized as the existing location of the airport is fixed based on the existing layout and its function. The area surrounding the airport has wetlands, thus, the project cannot avoid impacts to wetlands. Project design took into consideration measures to minimize unavoidable permanent wetland impacts, such as hauling in material on an existing road and keeping the clearing and grubbing areas to a minimal footprint.

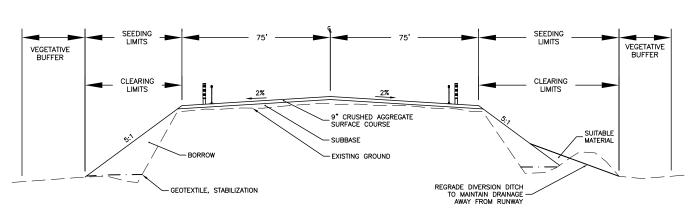
### Mitigation Statement

Given the avoidance and minimization measures incorporated into the project, compensatory mitigation for the remaining unavoidable impact is not proposed for this project.

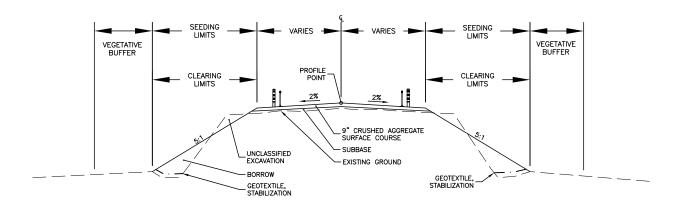




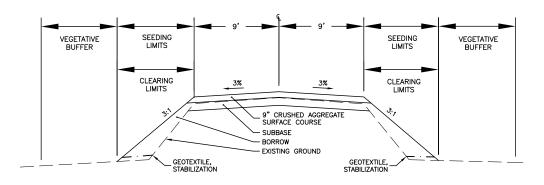




# RUNWAY TYPICAL SECTION NTS



# TAXIWAY TYPICAL SECTION NTS



# ACCESS ROAD TYPICAL SECTION

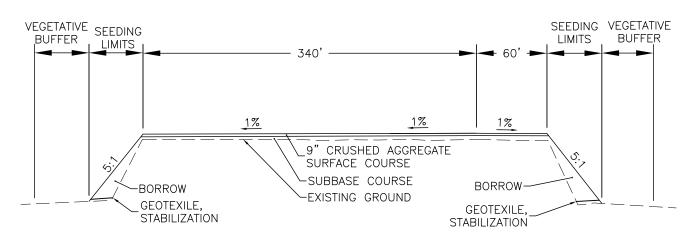
NOTE
10FT VEGETATIVE BUFFER IN AREAS THAT DO NOT DRAIN AWAY FROM PROJECT. FOR ALL OTHER AREAS THE VEGETATIVE BUFFER IS 25FT OR TO THE ROW WHICHEVER IS CLOSER.

STATE OF ALASKA
Department of Transportation and Public Facilities
APPLICANT/AGENT: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, Ak 99709

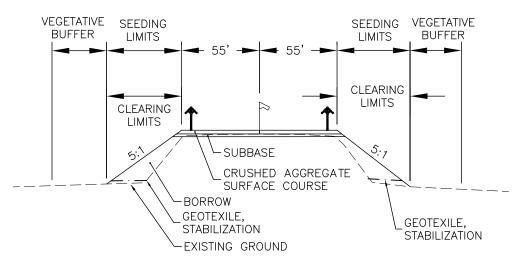
MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

RUNWAY, TAXIWAY, AND ACCESS ROAD TYPICAL SECTIONS

DATE: NOVEMBER 2022 | FIGURE 5 OF 9



# APRON TYPICAL SECTION NTS



SEGMENTED CIRCLE PAD TYPICAL SECTION NTS

NOTE 10FT VEGETATIVE BUFFER IN AREAS THAT DO NOT DRAIN AWAY FROM PROJECT. FOR ALL OTHER AREAS THE VEGETATIVE BUFFER IS 25FT OR TO THE ROW WHICHEVER IS CLOSER. STATE OF ALASKA

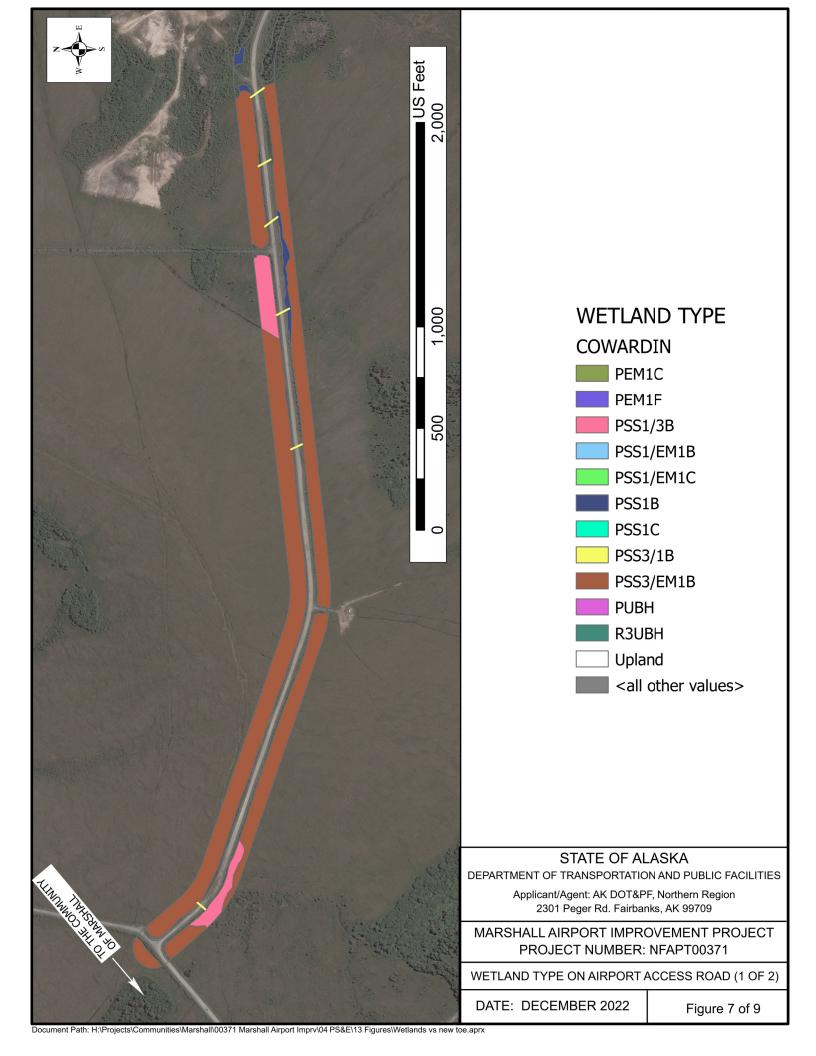
Department of Transportation and Public Facilities

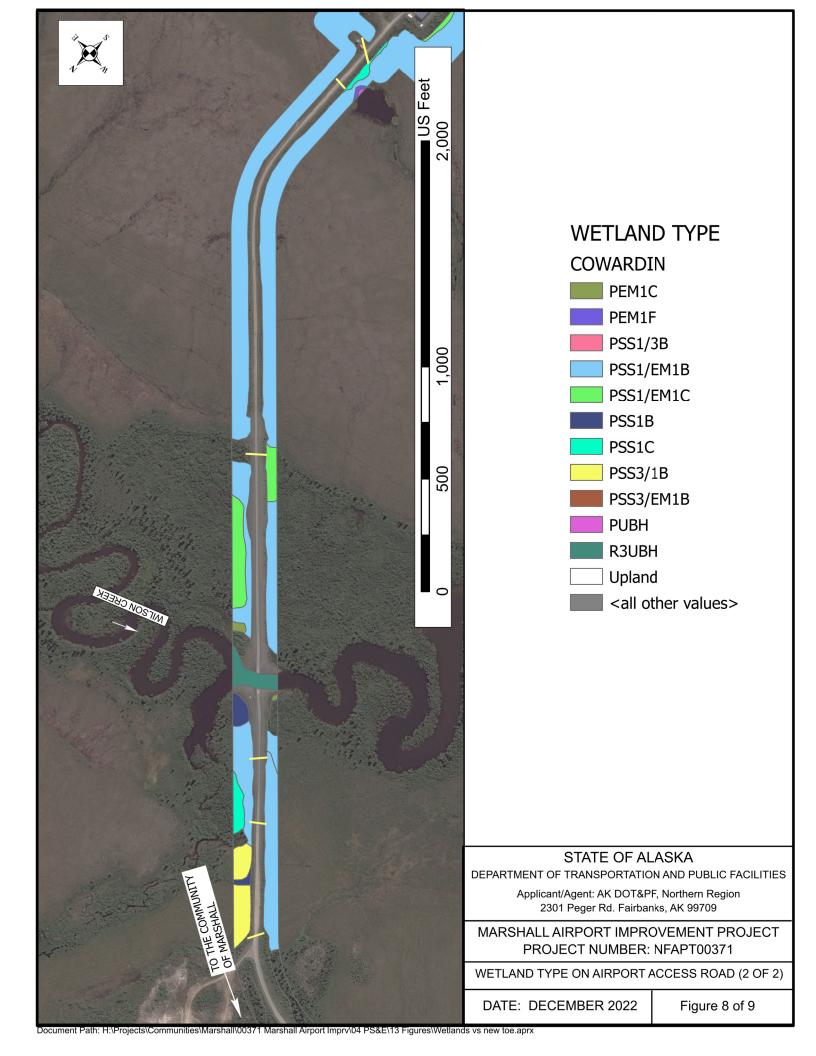
APPLICANT/AGENT: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, Ak 99709

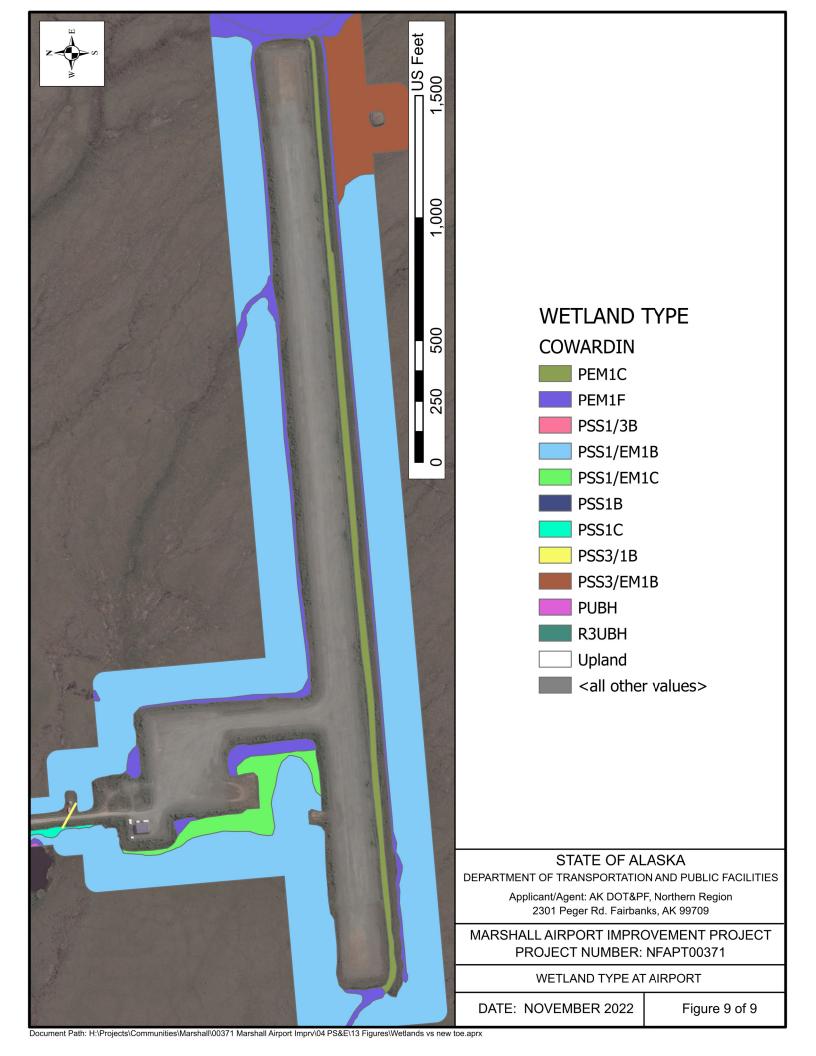
MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

APRON AND SEGMENTED CIRCLE
TYPICAL SECTIONS

DATE: NOVEMBER 2022 FIGURE 6 OF 9









### **CWA §401 Prefiling Meeting Request**

Alaska Department of Environmental Conservation Division of Water – Wastewater Discharge Authorization Program 555 Cordova Street, Anchorage AK 99501

email: DEC-401Cert@alaska.gov Phone: 907-269-6285

DEC Use Only
Date Received:

Starting April 6, 2022, the CWA section 401 certification process is once again governed by the CWA section 401 certification regulations EPA promulgated in 2020, codified at 40 CFR 121. On April 6, 2022, the U.S. Supreme Court issued a stay of the October 2021 order by the U.S. District Court for the Northern District of California that vacated EPA's 2020 Clean Water Act Section 401 Certification Rule (2020 Rule). The stay of the vacatur applies nationwide.

**40 CFR 121.4 Pre-filing meeting request.** (a) At least 30 days prior to submitting a certification request, the project proponent shall request a pre-filing meeting with the certifying authority. (b) the certifying authority is not obligated to grant or respond to the pre-filing meeting request.

Note: The following form contains the information that is requested regarding a §401 certification request and its purpose is to fulfil the prefiling meeting request per 40 CFR 121.4(7) – *Include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request.* Completing this form with as much information as possible will help with DEC's determination. DEC will review your request for a pre-filing meeting to determine whether a meeting is necessary. Note that DEC is not obligated to grant or respond to the pre-filing meeting request.

Next Steps: Submit this request form with as much information as possible along with any attachments such as drawings and or maps to DEC-401Cert@alaska.gov, this will fulfil the 40 CFR 121.4(7) pre-filing meeting request requirement. All requests submitted after regular business hours will be considered received the next business day. If DEC determines if a pre-filing meeting is to be scheduled, the meeting will likely be conducted via teleconference. If you do not receive a response for scheduling a pre-filing meeting and at least 30 days have passed, you may submit the certification request to DEC if a CWA §401 is required for your project.

DEC does charge a **fee** for CWA §401 certification requests based on acreage disturbed, see DEC's Permit Fees website <a href="https://dec.alaska.gov/water/wastewater/fees#IP-Fee">https://dec.alaska.gov/water/wastewater/fees#IP-Fee</a>. When you do file a CWA §401 certification request, it is important that you receive a determination from the federal agency regarding the permitting avenue (individual permit) the federal agency will pursue and whether a §401 certification is required. For instance, the USACE's Nationwide, Regional Permits, and Letters of Permission (LOP's) have typically been previously certified and do not require an individual §401 certification. Therefore, it is important that you communicate with the federal agency prior to submitting a certification request to determine the permitting avenue/type of permit.

submitting a certification rec	quest to determine th	ne permiti	ting avenue/ty	pe of perm	it.					
I. Identify the applica	able federal licen	se or pe	ermit*							
Permit License Number:	TBD POA-XXXX-XXXX	Fee	deral Agency	: X US	ACE, 🗆 FE	ERC, or	☐ Othe	er:		
*A copy of the federal permit or	license application is re	equired to	be submitted wi		•	•	rtification. (	18 AAC 15	.130, 18 A	AC 15.180)
		Λ-								
II. Project Proponent	and Point of Con	tact [40Cl	FR121.5(b)(1)]							
Applicant Information				Point	of Contact of	or Agent	Informati	ion		
Brett	<u>Nelsc</u>	n		_						
First Middle	Last			First		Middle		Last		
AK Dept. of Transport		cilities		-						
Company 2301 Peger Road	Title Fairbanks	AK	99709	Compan	У			Title		
Mailing Address Street or PO Box	City	State	99709 Zip	Mailing	Address or PO Box		City		State	Zip
brett.nelson@alaska.g	•			ivialling	Address of PO Box		City		State	Zip
Email	907-45 Phone	<u>51-22</u> 38	Fax (optional)	Email				Phone		Fax (optional)
				•						
I hereby authorize upon request, supplemen	tal information in s	support o	o act in my boof this permit			-	sing of th	is applic	ation an	d to furnish,
III. Name, Location, ar	nd Description of	<b>Project</b>	or Activity	[40CFR121.5(b	)(2)]					
Marshall Airport Imp	rovements									
Project Name or Title						-	070500		4.62	0.42200
address n/a		<u>larshall</u>		AK	99585	_ 61	.873500		-162	.043300
Project Street Address (if applicable)	Cit	У		State	Zip	(Dec	Latitude imal Degrees, 6	places)	(Decima	Longitude al Degrees, 6 places)
Other Location Descriptio	ns if known:									
	Marshall (Kusilvak C	ensus Area	) 25, 26, 31, 36	21 N	69 W, 70 W					
State Tax Parcel ID	Municipality		Section	Township	Range	E	stimated Start I	Date	Esti	mated End Date

DEC 401-Cert Request Form, 26-Apr-2022)
Page 1 of 5

Dire	ctions	s to the site:					
Natu	ıre of	Activity (Descrip	ition of project, include all featu	ıres)			
Proj	ect Pu	<b>Jrpose</b> (Describe t	the reason(s) for discharge)				
For f	ill ma	iterial, identify t	the material source:				
		material being d nt of each type			yd <sup>3</sup>	Туре	yd³
Surf	ace ar	rea in acres of w	vetlands or other waters	filled: Acres:		or, linear	feet:
Is dr	edgin	g involved? $\Box$	Yes, ☐ No; If yes, how n	nuch?	acres and volume	yd³.	
	a. Is	s the dredging c	considered a $\square$ new pro	ject, or is it $\square$ ma	ntenance? If mainte	enance, how frequent?	
	b. P	Proposed Placen	ment of dredged material	: (provide center coor	dinates of placement are	a)	
			Upland,		In water,	☐ Other:	
	_	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
	٨	Note, If marked (for example	sis been conducted of the no, this may later be requested of Tier analysis, see EPA already complete?	uired upon review Inland Testing Ma	of request. nual or <u>USACE Seatt</u>	tle District Civil Works D	
		-	on and nature of any p ng waters; [40CFR121.5(b)(4)]		ge that may result	t from the proposed p	project and the
			ng waters; [40CFR121.5(b)(4)] ceiving waters, and geog		otentially affected b	y the proposed dischar	rge:
Loss	tion a	of notantial disc	<b>charge</b> (Decimal Degrees, 5 place	ne maladan (mal) de 19 19			
LUCA		Activity	Description	es minimum), describe it r	Receiving Waterbo	ody Name Latitı	ude Longitude
	Dred		Description		Receiving water by	ody Name Lautt	ude Longitude
a.							
h							
b. c.							

(DEC 401- Prefiling Meeting Request Form, 26-Apr-2022)

Is the project within 1,500 feet of a known contaminated site: $\Box$ Y	
If yes, describe the identified contaminated site(s) or groundwar	ter plume within 1,500 feet.
Parameter(s) of Concern: (check all that apply):   Turbidity,  Sedimen	t. $\square$ Petroleum Hydrocarbons. $\square$ Metals. $\square$ Other.
Identify the parameters of concern that may be present in your discharge. Consider if	
known respective concentrations, persistence, and potential impacts to the receiving	
receiving water.:	
Impaired Waters: Does a discharge of any parameter identified about	ve occur to an impaired waterbody listed as a
Category 4 [304(b)] or Category 5 [303(d)] in the current EPA approx	ved Alaska's Integrated Water Quality Monitoring and
Assessment Report? (See http://dec.alaska.gov/water/water-quality/impaired-v	I I No. I
If determined necessary and requested by the Department, subm	nit sufficient and credible baseline water quality information for
the receiving water which meets the requirements of 18 AAC 70.	016(a)(6)(A-C).
Social or Economic Importance (18 AAC 70.016(c)(5): Provide inform	•
or economic development. The applicant shall complete either a soc	The state of the s
community in the area where the receiving water for the proposed of	
(A) Social Importance Analysis:	(B) Economic Importance Analysis:
(select one or more areas, and describe below)	(select one or more areas, and describe below)
☐ community services provided;	☐ employment, job availability, and salary impacts;
☐ public health or safety improvements;	☐ tax base impacts;
☐ infrastructure improvements;	$\square$ expanded leases and royalties;
$\square$ education and training;	☐ commercial activities;
☐ cultural amenities;	access to resources;
recreational opportunities	access to a transportation network
Describe (checked items above or attach as separate document)	access to a transportation network
Describe (checked items above of attach as separate document)	
V. Include a description of any methods and means propose	ed to monitor the discharge and the equipment or
measures planned to treat, control, or manage the discha-	arge [40CFR121.5(b)(5)]
(Example: Provide a brief explanation describing how impacts to waters of t	
Include best management practices (BMPs) for sediment and erosion control	ols that will be implemented to minimize the environmental impacts.)

(DEC 401- Prefiling Meeting Request Form, 26-Apr-2022)

			tification Number	al Agencies for Work Des Date Applied	Date Approved	Date Den
Nould include but is not	restricted to sening buildi	ng and flood pla	in normits			
vould include but is not	restricted to zoning, buildi	ng, and flood pla	in permits.			
	operty Owners, Lessees, Et ntered here, please attach a s		ty Adjoins the Wa	terbody(s) listed in Sect	i <b>on</b> Error! Reference	source not
Name(s)			b. Name(s)			
Address			Address			
City	State	Zip	City		State	Zip
Name(s)			d. Name(s)			
Address			Address			
		72				
City	State	Zip	f		State	Zip
Name(s)			Name(s)			
Address			Address			
City	State	Zip	City		State	Zip
I. Attachments: (as n	nuch as available for the pre-fi	iling meeting reque	st)			
permit application recontemporaneous w 15.180)	1 Certification Request, a equiring certification und ith the submission of the ings/Plan Sets	der 33 U.S.C. 13	41 (CWA §401) t	o include all accompa	nying information,	
	ged material					
Tier Analysis of dred						
Tier Analysis of dred Sampling Results	ity Information					
Tigures and/or Draw  Tier Analysis of dred;  Sampling Results  Baseline Water Qual  Other/Comments	ity Information					
Tier Analysis of dred Sampling Results Baseline Water Qual	ity Information					
Tier Analysis of dred Sampling Results Baseline Water Qual	ity Information					
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Tier Analysis of dred Sampling Results Baseline Water Qual	ity Information					
Tier Analysis of dred Sampling Results Baseline Water Qual	ity Information					

(DEC 401- Prefiling Meeting Request Form, 26-Apr-2022)

#### VIII. Certification Statement [40CFR121.5(b)(8-9)]

As per 18 AAC 15.030 signing of applications, all permit or approval applications must be signed as follows:

- 1) in the case of corporations, by a principal executive officer of at least the level of vice president or his duly authorized representative, if the representative is responsible for the overall management of the project or operation;
- 2) in the case of a partnership, by a general partner;
- 3) in the case of a sole proprietorship, by the proprietor; and
- 4) in the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.

			<u> </u>			
First	Middle		Last			
Company			Title			
Mailing Address Street or PO Box		City		State	Zip	
Email			Phone		Fax (optional)	
Signature			Date			

### Submit the CWA §401 Prefiling Meeting Request to <a href="DEC-401Cert@alaska.gov">DEC-401Cert@alaska.gov</a>.

*Include in the subject line the following:* 

"CWA §401 Prefiling Meeting Request - <Insert Federal Agency and permit number or license number> - <insert project title>".

Note: DEC does charge a fee for processing a CWA §401 water quality certification, see DEC Permit Fee website <a href="https://dec.alaska.gov/water/wastewater/fees#IP-Fee">https://dec.alaska.gov/water/wastewater/fees#IP-Fee</a>

C 401- Prefiling Meeting Request Form, 26-Apr-2022)

#### Instructions for Preparing a Pre-meeting Request for CWA §401 Certification for an Individual Permit or License

(General Instruction: If more space is needed than what is provided in the form, attach a sheet with the necessary information and indicate the appropriate section for reference.)

#### I. Identify the applicable federal license or permit [40CFR121.5(b)(3)]

Include the Federal Agency's permit license number and identify the corresponding agency for which you are applying for the Alaska DEC CWA §401 certification.

#### II. Project Proponent and Point of Contact [40CFR121.5(b)(1)]

Enter the name, contact information to include the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information. Point of Contact or Agent Information to be completed if you choose to have an agent.

#### III. Name, Location, and Description of Project or Activity [40CFR121.5(b)(2)]

<u>Project Name</u>: Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center. Include location and description of the project or activity.

Estimate Start/End Dates: What are the anticipated start and end dates for project construction?

<u>Location</u>: Provide Latitude & Longitude in decimal degrees with a minimum of five decimal places, example: 61.21688, -149.87875 latitude, longitude, respectively. Provide street address if applicable, and other location descriptions if known. If the facility or project lacks a street address, indicate the general location of the facility (e.g., intersection of x and y).

<u>Directions to the site</u>: Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

<u>Nature of the Activity</u>: Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms. The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper.

<u>Project Purpose</u>: Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

<u>Types of Material Being Discharged and the Amount of Each Type in Cubic Yards</u>. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes rock, sand, clay, concrete, etc.

<u>Surface Areas of Wetlands or Other Waters Filled</u>. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper.

<u>Dredging</u>: Identify if any dredging is involved. If so, quantify the acres and volume to be dredged. Provide an assessment of the dredge prism and sample results to support a Tier analysis. Consult the <u>EPA Inland Testing Manual</u> or the <u>USACE Seattle District Civil Works DMMP User Manual</u> for an example of a Tier analysis of the dredge prism. It is recommended to consult with DEC and Corps prior to conducting sampling during pre-application meetings to avoid delays.

<u>Is any portion of the work already complete</u>: Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps or other federal/state permit, identity the authorization, if possible.

# IV. Identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters; [40CFR121.5(b)(4)]

<u>Name and Location of potential discharge</u>. Provide latitude and longitude coordinates (Decimal Degrees, minimum 5 decimal places) of potential discharge. Describe the location if necessary. Include the geographic extent potentially affected by the proposed discharge.

(DEC 401- Prefiling Meeting Request Form, Apr-2022)

#### Instructions for Preparing a Pre-meeting Request for CWA §401 Certification for an Individual Permit or License

<u>Contaminated Sites</u>: Identify any known contaminated sites within 1,500 feet of the proposed project discharge, to include those known by the applicant or known DEC identified contaminated site either in "Active" or "Cleanup Complete – Institutional Controls" status. For more information, see DEC Contaminated Sites website (<u>dec.alaska.gov/spar/csp.aspx</u>) for ability to search via map, database, and background summaries.

<u>Parameters of Concern</u>: Identify the parameters of concern that may be present in your discharge. Consider if other parameters may be present from past activities in the area. Describe if known respective concentrations, persistence, and potential impacts to the receiving water and data on parameters that may alter the effects of the discharge to the receiving water.

<u>Impaired Waters</u>: Does a discharge of any parameter identified may occur to an impaired waterbody listed as a Category 4 [304(b)] or Category 5 [303(d)] in the current EPA approved Alaska's Integrated Water Quality Monitoring and Assessment Report?

See <a href="http://dec.alaska.gov/water/water-quality/impaired-waters.aspx">http://dec.alaska.gov/water/water-quality/impaired-waters.aspx</a> for the most recently approved report and category listings.

Social or Economic Importance Analysis: select as appropriate and provide a description per 18 AAC 70.016(c)(5).

# V. Include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge [40CFR121.5(b)(5)]

<u>Nature of potential discharge and potential environmental impacts on the receiving water</u>: Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Include best management practices (BMPs) for sediment and erosion controls that will be implemented to minimize the environmental impacts.

# VI. List of all other federal, interstate, tribal, state, territorial, or local agency authorizations required for the proposed project, including all approvals or denials already received; [40CFR121.5(b)(6)]

You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for the CWA §401 certification.

#### VIII. Certification Statement [40CFR121.5(b)(8-9)]

As per 18 AAC 15.030 Signing of applications, all permit or approval applications must be signed as follows:

- 5) in the case of corporations, by a principal executive officer of at least the level of vice president or his duly authorized representative, if the representative is responsible for the overall management of the project or operation;
- 6) in the case of a partnership, by a general partner;
- 7) in the case of a sole proprietorship, by the proprietor; and
- 8) in the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

For more information regarding CWA §401 Certifications, see the DEC website at <a href="http://dec.alaska.gov/water/wastewater/wetlands">http://dec.alaska.gov/water/wastewater/wetlands</a>, or contact:

Alaska Department of Environmental Conservation
Division of Water – Wastewater Discharge Authorization Program
555 Cordova Street, Anchorage AK 99501

email: DEC-401Cert@alaska.gov Phone: 907-269-6285

#### Submit the CWA §401 Pre-Filing Meeting Request to DEC-401Cert@alaska.gov. Include in the subject line the following:

"CWA §401 Pre-Filing Meeting Request - < Insert Federal Agency and permit number or license number> - < insert project title>".

Note: DEC does charge a **fee** for processing CWA §401 water quality certifications which will typically be assessed after the certification decision is issued. See DEC Permit Fee website <a href="https://dec.alaska.gov/water/wastewater/fees#IP-Fee">https://dec.alaska.gov/water/wastewater/fees#IP-Fee</a>

(DEC 401 - Prefiling Meeting Request Form, Apr-2022)

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#### U.S. Army Corps of Engineers (USACE)

#### APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -OMB No. 0710-0003 Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at <a href="whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil">whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil</a>. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

#### PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <a href="http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx">http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx</a>

	(ITEMS 1 THRU 4 TO BE	FILLED BY TH	IE CORPS)		
1. APPLICATION NO.	2. FIELD OFFICE CODE		3. DATE RECEIVED	4. DATE APPLI	CATION COMPLETE
	(ITEMS BELOW TO BE	FILLED BY AP	PLICANT)		
5. APPLICANT'S NAME		8. AUTHORIZ	ZED AGENT'S NAME AN	ID TITLE (agent is	s not required)
First - Brett Middle -	Last - Nelson	First - same	Middle -	Last ·	
Company - Alaska Dept. Transportation as	nd Public Facilities	Company -			
E-mail Address - brett.nelson@alaska.gov		E-mail Addres	s -		
6. APPLICANT'S ADDRESS:		9. AGENT'S A	ADDRESS:		
Address- 2301 Peger Road		Address-			
City - Fairbanks State - AK	Zip - 99709 Country - USA	City -	State -	Zip -	Country -
7. APPLICANT'S PHONE NOs. w/AREA COD	E	10. AGENTS PHONE NOs. w/AREA CODE			
a. Residence b. Business 907-451-2238	c. Fax	a. Residence	b. Business	S C.	Fax
	STATEMENT OF	AUTHORIZATI	ON		
I hereby authorize, supplemental information in support of this		my agent in the	processing of this applic	ation and to furnis	h, upon request,
<del></del>	SIGNATURE OF APPLICA	ANT	DATE		
N.	AME, LOCATION, AND DESCRI	PTION OF PRO	JECT OR ACTIVITY		
12. PROJECT NAME OR TITLE (see instruction Marshall Airport Improvements	ons)				
13. NAME OF WATERBODY, IF KNOWN (if a	14. PROJECT STREET ADDRESS (if applicable)				
Poltes Slough/Yukon River		Address N/A	1		
15. LOCATION OF PROJECT		0:1	11 00		7: 00505
Latitude: •N 61.8735 Longit	tude: °W -162.0433	City - Marsha	all Si	ate- Alaska	Zip- 99585
16. OTHER LOCATION DESCRIPTIONS, IF F	(NOWN (see instructions)				
State Tax Parcel ID Municipality Marshall (Kusilvak Census Area)					
Section - 25, 26, 31, 36 Township - 21 N			e - 69 W, 70 W		

17. DIRECTIONS TO THE SITE To get to the airport, take the airport access road	d 1.7 miles until you end up at the airport itself	:
18. Nature of Activity (Description of project, include a The project consists of the following work: reha and flatten slopes. Re-establish as-built drainage road. The existing road varies from 14-foot to 1 the airport access road in approximately the san location); replace airport lighting, segmented circular to the same control of the same co	abilitate the existing runway, taxiway, and apro- e and re-grade ditch on the south side of the run 8-foot wide and will be widened to a consisten- ne location and depth; replace FAA runway en-	nway; rehabilitate and widen the airport access at 18-feet wide; replace existing culverts along d identifier lights (REILs) (in the same
Project work limits consists of the disturbed for amount of work beyond the existing embankme		ad and embankments. There may be limited
19. Project Purpose (Describe the reason or purpose The purpose of the proposed project is to rehabilitation operations. Minimal surfacing remains failures, which reduces the runway safety area beyond its projected 20-year useful life and has maintenance to remain operable. The airport act to the airport less reliable. Road rehabilitation which building codes for the fuel storage, has a gravel tanks to current standards and installing a concreatends the useful life and reduces maintenance	ilitate the runway to meet FAA standards and r, exposing the subbase and increasing safety coolelow standard 150-foot width per FAA AC 15 experienced prolonged outages due to system cess road has failing culverts and sections which will re-establish reliable access to the airport. T floor, and other components require increasing the floor reduces contamination potential. Upg	oncerns. Shoulders have significant slope 50/5300-13B. The airport lighting system is failures, requiring increasing levels of the become soft during wet season making access the existing SREB does not meet current g levels of maintenance. Upgrading the fuel
USE BLOCKS 20	-23 IF DREDGED AND/OR FILL MATERIAL IS TO	BE DISCHARGED
20. Reason(s) for Discharge The project is needed as it is the only way to accriver. The existing airport does not meet FAA sa		
21. Type(s) of Material Being Discharged and the Am	ount of Each Type in Cubic Yards:	
	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Gravel: 75,800		
22. Surface Area in Acres of Wetlands or Other Wate Acres 9.7 or Linear Feet	rs Filled (see instructions)	
23. Description of Avoidance, Minimization, and Com See attached supplemental information.	pensation (see instructions)	

**ENG FORM 4345, FEB 2019** Page 2 of 3

24. Is Any Portion of the Work Already Complete? $\  \  \  \  \  \  \  \  \  \  \  \  \ $							
				e than can be entered here, please atta	ach a supplemental list).		
a. Address- Yukon Deli	ta National Wildlife Refu	ge: 807 Eddie Hoffmar	1 State Highway				
City - Bethel		State - A	Alaska	Zip - 99559			
b. Address- Village of Marshall: 50 Yukon Avenue							
City - Marshall		State - /	Alaska	Zip - 99585			
c. Address- Hunter Nati	c. Address- Hunter Native Allotment-Airport Access Road						
City - Marshall		State - Alaska		Zip - 99585			
d. Address-							
City -		State -		Zip -			
e. Address-							
City -		State -		Zip -			
26. List of Other Certifica	tes or Approvals/Denials rec		State, or Local Agencies fo	or Work Described in This App	olication.		
AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED		
SHPO	Section 106						
COE	404 IP Permit						
ADEC	410 Water Cert						
FAA	4(f) approval						
* Would include but is not	restricted to zoning, building	, and flood plain permits					
27. Application is hereby complete and accurate. I applicant.	made for permit or permits to further certify that I possess	authorize the work descr the authority to undertake	ibed in this application. I c the work described herein	ertify that this information in t or am acting as the duly autl	his application is norized agent of the		
Brett Nelson	Digitally signed by Brett Nelson DN: on-Brett Nelson, o-DOT&FF, ou-Northern Region, email-brett.nelson@alasle.set3 Date: 2022.12.30 13-89:15-09007	12/30/2022					
	E OF APPLICANT	DATE		JRE OF AGENT	DATE		
• •	e signed by the person w statement in block 11 has			applicant) or it may be sig	ned by a duly		

statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

ENG FORM 4345, FEB 2019

Page 3 of 3

knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States

# CWA 401 Water Quality Certification Request

version 1.22

(Submission #: HPQ-MQY8-S52GH, version 1)

# **Details**

Site: Marshall Airport Improvments

Submission ID HPQ-MQY8-S52GH

**Status** Draft

# **Form Input**

## Form Instructions

Instructions for filling out the 401 Certification Form are located on the Alaska DEC website at the link below.

401 Certification Form Instructions

# **Contact Information (1 of 2)**

## **Required Contacts**

The following contacts are required for this application. Multiple roles may be selected per contact.

- Applicant (Responsible Party)
- Billing contact

#### **Contact Role(s)**

**Applicant** 

#### Contact

**Prefix** 

**NONE PROVIDED** 

First Name Last Name Brett Nelson

Title

Regional Environmental Manager

**Organization Name** 

Alaska Department of Transportation

Phone Type Number Extension

Business 907-451-2238

**Email** 

brett.nelson@alaska.gov

**Mailing Address** 

2301 Peger Road

Fairbanks, AK 99709

# **Contact Information (2 of 2)**

## Required Contacts

The following contacts are required for this application. Multiple roles may be selected per contact.

- Applicant (Responsible Party)
- Billing contact

#### Contact Role(s)

**Billing Contact** 

#### Contact

**Prefix** 

NONE PROVIDED

**First Name** Last Name
Elizabeth *Miller-Chapman* 

Title

Administrative Assistant II

**Organization Name** 

Alaska Department of Transportation

Phone Type Number Extension

Business 907-451-5420

**Email** 

elizabeth.milller1@alaska.gov

**Mailing Address** 

2301 Peger Road

Fairbanks, AK 99709

# **Facility Information**

### Identify the applicable federal license or permit

A copy of the federal permit or license application is required to be submitted with the request for the water quality certification. (18 AAC 15.130, 18 AAC 15.180)

Permit License Number (eg. POA-XXXX-XXXX)

POA-XXXX-XXXX

**Federal Agency** 

Army Corps of Engineers (USACE)

#### **Project Information**

#### **Project Name or Title**

Marshall Airport Improvments

#### **Project Address**

address n/a

Marshall, AK 99585

#### What is the land use designated as?

State

Visit the link below to help with conversion between DMS and Latitude/Longitude DSM - Lat/Long converter

#### **Project Location**

61.87350000000001,-162.0433000000000

address n/a, Marshall, AK

Visit the link if you need to convert the lat/long to get the PLSS information. Converter for Township and Range

**PLSS Location (Public Land Survey System)** 

Borough/Municipality	Meridian	Section	Township	Range
Kusilvak (Wade Hampton) Census Area	Seward	25, 26, 31, 36	21 N	69 W, 70 W

#### **Directions to Site**

To get to the airport, take the airport access road 1.7 miles until you end up at the airport itself.

#### Nature of Activity (Description of project, include all features)

The project consists of the following work:

- Rehabilitate the existing runway, taxiway, and apron.
- Reconstruct failing embankment shoulders and flatten slopes. Re-establish as-built drainage and re-grade ditch on the south side of the runway.
- Rehabilitate and widen the airport access road. The existing road varies from 14-foot to 18-feet wide and will be widened to a consistent 18 feet wide.
- Replace existing culverts along the airport access road in approximately the same location and depth. (see Figure 2, culvert locations are in blue).
- Replace FAA runway end identifier lights (REILs) (in the same locations.)
- Replace airport lighting, segmented circle, and navigational aids.
- Rehabilitate the existing SREB and pad.

Project work limits consists of the disturbed footprint of the runway, taxiway, apron, service road and embankments. There may be limited amount of work beyond the existing embankments.

#### **Project Purpose (Describe the reason(s) for discharge)**

The DOT&PF proposes to improve the Marshall Airport in Marshall, Alaska (Figure 1).

The purpose of the proposed project is to rehabilitate the runway to meet FAA standards and reestablish safe and efficient surfacing for aviation operations. Minimal surfacing remains, exposing the subbase and increasing safety concerns. Shoulders have significant slope failures, which reduces the runway safety area below standard 150 foot width per FAA AC 150/5300-13B. The airport lighting system is beyond its projected 20 year useful life and has experienced prolonged outages due to system failures, requiring increasing levels of maintenance to remain operable. The airport access road has failing culverts and sections which become soft during wet season making access to the airport less reliable. Road rehabilitation will re-establish reliable access to the airport. The existing SREB does not meet current building codes for the fuel storage, has a gravel floor, and other components require increasing levels of maintenance. Upgrading the fuel tanks to current standards and installing a concrete floor reduces contamination potential. Upgrading electrical heating and repainting siding extends the useful life and reduces maintenance costs. The overall need for the proposed action is to maintain the existing level of safe, reliable year-round air access to the community of Marshall.

# **Discharge Information**

#### For fill material, identify the material source

Fill will come from a contractor furnished material site.

Types of material being discharged and the amount of each type (cubic yards)

Туре	Cubic Yards	
Gravel	75.800	

#### Surface area in acres of wetlands or other waters filled

Surface Area	Units
9.3	Acres

#### Is this a linear project? NONE PROVIDED

## Is dredging involved?

No

# Is any portion of the work already complete?

Identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters

Please select 'Other' if your waterbody is not in the list below. You can start typing the name of the waterbody to filter the list.

#### Waterbody Name (Unnamed Wetlands - Not Allowed)

Poltes Slough

Location of potential discharge (Decimal Degrees, 6 places), describe if necessary

#	Activity	Description	Receiving Waterbody Name	Longitude	Latitude
1.	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

Is the project within 1,500 feet of a known contaminated site?

#### Parameter(s) of Concern

Identify the parameters of concern that may be present in your discharge. Consider if other parameters may be present from past activities in the area.

#### Parameter(s)

Turbidity Sediment

#### Describe if known respective concentrations, persistence, and potential impacts to the receiving water and data on parameters that may alter the effects of the discharge to the receiving water

Sedimentation and turbidity from the placement of fill within wetlands at the airport may be a concern. Sediment entering stormwater degrades the quality of water for drinking, wildlife, wetlands, and uplands. It can fill up culverts used to carry water away from roads and homes, which increases the potential for flooding. Water polluted with sediment becomes cloudy, preventing animals from seeing food, and murky water prevents natural vegetation from growing. Sediment in stream beds disrupts the natural food chain by destroying habitat for small stream organisms, causing fish population declines.

#### **Impaired Waters**

See the link below for the most recently approved report and category listings. <a href="https://dec.alaska.gov/water/water-quality/integrated-report/">https://dec.alaska.gov/water/water-quality/integrated-report/</a>

Does a discharge of any parameter identified above occur to an impaired waterbody listed as a Category 4 [304(b)] or Category 5 [303(d)] in the current EPA approved Alaska's Integrated Water Quality Monitoring and Assessment Report?

If determined necessary and requested by the Department, submit sufficient and credible baseline water quality information for the receiving water which meets the requirements of 18 AAC 70.016(a)(6)(A-C).

#### **Social or Economic Importance**

(18 AAC 70.016(c)(5): Provide information that demonstrates the accommodation of important social or economic development. The applicant shall complete either a social OR economic importance analysis (or both) for each affected community in the area where the receiving water for the proposed discharge is located.

#### **Social Importance Analysis**

Infrastructure improvements
Public health or safety improvements

#### **Economic Importance Analysis**

Access to a transportation network

#### **Describe**

The project would provide safer and more reliable air travel and access, including medical evacuation, for all residents, including children and low-income minorities. The airport would remain open during construction, but minor airport delays could occur as a result of construction activities.

The project would not result in risks to children's environmental health and safety; noise levels at the school and clinical facilities would remain within land use compatibility standards. Vehicle traffic may increase during construction, particularly along haul routes to material sites, but it is unlikely to result in any substantial increase in safety risks.

Economic advantages would likely arise from a short-term increase in construction employment opportunities (i.e., local hire) and additional revenue for service businesses that directly or indirectly support the project's construction. The project would not impact the community tax bases.

#### Description of Social or Economic Importance, if needed

NONE PROVIDED
Comment
NONE PROVIDED

Include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge Complete avoidance of discharge into and impacts to wetlands is not possible to meet the project's purpose and need. Careful consideration was taken during project design to minimize impacts as avoidance is not possible.

See the attached Supplemental Information Sheet for details.

Have you been working with anyone in the Army Corps of Engineers (USACE) No

Include a list of all other federal, interstate, tribal, state, territorial, or local agency authorizations required for the proposed project, including all approvals or denials already received.

Agency Type of Approval*	Identification	Date	Date	Date
	Number	Applied	Approved	Denied

Agency	Type of	Identification	Date	Date	Date
	Approval*	Number	Applied	Approved	Denied
USACE	404 Individual	NONE	NONE	NONE	NONE
	Permit	PROVIDED	PROVIDED	PROVIDED	PROVIDED
SHPO	Section 106	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

<sup>\*</sup>Would include but is not restricted to zoning, building, and flood plain permits.

# Addresses of Adjoining Property Owners, Lessees, Etc. Whose Property Adjoins the Waterbody

#	Name	Address	City	State	Zip
1	Yukon-Delta National Wildlife Refuge	807 Eddie Hoffman State Highway	Bethel	Alaska	99559
2	Village of Marshall	50 Yukon Avenue	Marshall	Alaska	99585
3	Hunter Native Allotment	Airport Access Road	Marshall	Alaska	99585

# **Attachments**

#### Include documentation that is listed as required below

Required: Copy of the federal license or permit requiring certification under 33 U.S.C. 1341 (Clean Water Act, Section 401) to include all accompanying information, contemporaneous with the submission of the application to the federal licensing or permitting agency. (18 AAC 15.130, 18 AAC 15.180)
Required: Figures and/or Drawings/Plan Sets

#### **Copy of Federal Application (USACE)**

Att 1-Marshall Airport IP App Form.pdf - 01/12/2023 08:26 AM

Comment

NONE PROVIDED

#### Figures and/or Drawings/Plan Sets

Att 2-Marshall Airport wetland figures.pdf - 01/12/2023 08:30 AM

Comment

NONE PROVIDED

#### **Document Attachments**

NONE PROVIDED

Comment

NONE PROVIDED

As per 18 AAC 15.030 signing of applications, all permit or approval applications must be signed as follows:

1) in the case of corporations, by a principal executive officer of at least the level of vice president or his duly authorized representative, if the representative is responsible for the overall management of the project or operation;

- 2) in the case of a partnership, by a general partner;
- 3) in the case of a sole proprietorship, by the proprietor; and
- 4) in the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee. The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief. The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.

# **Attachments**

Date	Attachment Name	Context	Confidential?	User
1/12/2023 8:30 AM	Att 2-Marshall Airport wetland figures.pdf	Attachment	No	zoe.petersen@alaska.gov zoe.petersen@alaska.gov
1/12/2023 8:26 AM	Att 1-Marshall Airport IP App Form.pdf	Attachment	No	zoe.petersen@alaska.gov zoe.petersen@alaska.gov

From: Yount, Lana CIV USARMY CEPOA (USA)

To: Jensen, Melissa L (DOT); bre.klayum@mail.house.gov; Simone.Auger@mail.house.gov;

Logan.Basner@mail.house.gov; Josh.Revak@mail.house.gov; Alex.Ortiz@mail.house.gov;

carrie keil@sullivan.senate.gov; services@murkowski.senate.gov; Nelson, Brett D (DOT); fsgalaska@gmail.com; Templeton, Harvey M (DNR); Clawson, Chelsea M (DFG); Nichols, Todd F (DFG); Wessel, Maria L (DFG); Brase, Audra L (DFG); skip@riverboatdiscovery.com; rkemnitz@blm.gov; leeawood@hotmail.com; Toby Drake;

alaska.fhwa@fhwa.dot.gov; planning@fnsb.us; City Golovin@outlook.com; lisa@northern.org;

kellen.spillman@fnsb.gov; DNR, Parks OHA Review Compliance (DNR sponsored);

nvmarshallmanager@gmail.com; admin@ohogtc.net; office@maserculiq.com; adameno@lclark.edu;

alex@adn.com; Grundman, Chris C (CED); Rypkema, James (DEC); Weimer, Willow A (DEC); DEC 401 Cert (DEC sponsored); Larson, Clifford A (DNR); Kirkham, Russell A (DNR); Templeton, Harvey M (DNR); DNR, Parks OHA

Review Compliance (DNR sponsored); abailey@petroleumnews.com; StephensD@akrr.com;

greenbaumJ@akrr.com; alexandre.Lai@alyeska-pipeline.com; lonniea@amaktowing.com; jengen@bellinghammarine.com; rkemnitz@blm.gov; bobb@claalaska.com; BCharles@kniktribe.org; BrothertonPipeline@gmail.com;

BryceEricksonConsult@Outlook.com; cwyatt@nrdc.org; dcollins@traylor.com;

Dana Herndon@murkowski.senate.gov; Urban, David; donkiely@computer.org; ikorhonen@earthjustice.org; ssaunders@earthjustice.org; LaCroix.Matthew@epa.gov; 404PNS-R10-OW@epa.gov; morgante.louis@epa.gov;

eyak@redzone.org; Kristi.M.Ponozzo@faa.gov; jack.gilbertsen@faa.gov; Laura.A.Sample@faa.gov;

mgstoddard@gci.net; hsteele@adv-eco.com; mdalton@hdrinc.com; Paul.McLarnon@hdrinc.com; Budnik, John P CIV USARMY CEPOA (USA); msavoie@kinneticlabs.com; merco@mercomarine.com; mswalling@swalling.com; mbarney@concretetech.com; monty.rogers@gmail.com; nsw@alaskan.com; nmfs.akr.habitat@noaa.gov; julie.scheurer@noaa.gov; greg.balogh@noaa.gov; Emily A Johnson@nps.gov; bella furr@nps.gov;

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publisher@petroleumnews.com; knelson@petroleumnews.com; pioneerreserve@hotmail.com; radamsheard@bloomberg.net; RMartin@kniktribe.org; angie@sawcak.org; jess.kayser@sawcak.org;

pilots@seapa.com; Lisa.Lannigan@djc.com; info@setrust.net; srba@alaska.net; sheffield@aoga.org; Miller, Jeff;

ecolaw@trustees.org; david.m.seris@uscg.mil; todd.r.buck@uscg.mil; Richard.A.Sargent@uscg.mil; SMB-

D17Juneau-LNM@uscq.mil; Catherine.E.Cavender@uscq.mil; FW7 POANotices@fws.gov; Leslie.Robbins@jacobs.com; lvandommelen@trustees.org; Natalie.Dawson@audubon.org;

audubonalaska@audubon.org; bknight15@icloud.com; loretta@salmonstate.org

Cc: Atkins, Patrick Allen CIV USARMY CEPOA (USA); Pagemaster, Reg POA

Subject: POA-2006-00200, Marshall Airport, Poltes Slough
Date: Wednesday, March 15, 2023 2:40:59 PM
Attachments: POA-2006-00200 PoltesSlough PN.pdf

**CAUTION:** This email originated from outside the State of Alaska mail system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States.

PUBLIC NOTICE DATE: March 15, 2023

EXPIRATION DATE: April 14, 2023

REFERENCE NUMBER: POA-2006-00200

WATERWAY: Poltes Slough

APPLICANT: Mr. Brett Nelson, Alaska Department of Transportation & Public Facilities

(ADOT&PF), 2301 Peger Road, Fairbanks, AK 99709

AGENT: Ms. Melissa Jensen, ADOT&PF, 2301 Peger Road, Fairbanks, AK 99709

LOCATION: The project site is located at Latitude 61.8735, Longitude -162.0433; near Poltes Slough in Marshall, Alaska.

PURPOSE: The purpose of the proposed project as stated by the applicant, is to rehabilitate the runway to meet Federal Aviation Administration (FAA) standards and reestablish safe and efficient surfacing for aviation operations.

CONTACT: Please contact Allen Atkins at

(907) 753-2780, toll free from within Alaska at (800) 478-2712, by fax at (907) 753-5567, or by email at <a href="mailto:patrick.a.atkins@usace.army.mil">patrick.a.atkins@usace.army.mil</a>, if further information is desired concerning this notice.

All comments regarding this Public Notice should be sent to this address:

U.S. Army Corps of Engineers, Alaska District Regulatory Division / CEPOA-RD 2204 3rd Street, P.O. Box 6898 JBER, AK 99506-0898

If you desire to submit your comments by email, you should send it to the Project Manager's email as listed above or to <a href="mailto:regpagemaster@usace.army.mil">regpagemaster@usace.army.mil</a>. All comments should include the Public Notice reference number listed above.

Please do not reply to this email.

The full text of this public notice, as well as associated maps and drawings, are available on our website at:

http://www.poa.usace.army.mil/Missions/Regulatory/PublicNotices.aspx

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From: Brase, Audra L (DFG)

To: Atkins, Patrick Allen CIV USARMY CEPOA (USA); regpagemaster@usace.army.mil

Cc:Jensen, Melissa L (DOT); Nelson, Brett D (DOT)Subject:RE: POA-2006-00200, Marshall Airport, Poltes Slough

**Date:** Thursday, March 16, 2023 11:04:03 AM

Attachments: RE NFATP000371 Marshall Airport Improvements Scoping Request.msq

ADF&G had provided the attached comments to ADOT&PF in March 2022 regarding the Marshall runway & road rehabilitation project, and we have no additional comments at this time.

Thanks, Audra

Audra Brase Regional Supervisor ADF&G Habitat - Fairbanks 907-459-7282

From: Yount, Lana CIV USARMY CEPOA (USA) <Lana.Yount@usace.army.mil>

**Sent:** Wednesday, March 15, 2023 10:24 AM

To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; bre.klayum@mail.house.gov; Simone.Auger@mail.house.gov; Logan.Basner@mail.house.gov; Josh.Revak@mail.house.gov; Alex.Ortiz@mail.house.gov; carrie keil@sullivan.senate.gov; services@murkowski.senate.gov; Nelson, Brett D (DOT) <br/> brett.nelson@alaska.gov>; fsgalaska@gmail.com; Templeton, Harvey M (DNR) <harvey.templeton@alaska.gov>; Clawson, Chelsea M (DFG) <chelsea.clawson@alaska.gov>; Nichols, Todd F (DFG) <todd.nichols@alaska.gov>; Wessel, Maria L (DFG) <maria.wessel@alaska.gov>; Brase, Audra L (DFG) <audra.brase@alaska.gov>; skip@riverboatdiscovery.com; rkemnitz@blm.gov; leeawood@hotmail.com; Toby Drake <tdrake@drakeconstruction.net>; alaska.fhwa@fhwa.dot.gov; planning@fnsb.us; City Golovin@outlook.com; lisa@northern.org; kellen.spillman@fnsb.gov; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>; nvmarshallmanager@gmail.com; admin@ohogtc.net; office@maserculiq.com; adameno@lclark.edu; alex@adn.com; Grundman, Chris C (CED) <chris.grundman@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Weimer, Willow A (DEC) <willow.weimer@alaska.gov>; DEC 401 Cert (DEC sponsored) <dec-401cert@alaska.gov>; Larson, Clifford A (DNR) <clifford.larson@alaska.gov>; Kirkham, Russell A (DNR) <russell.kirkham@alaska.gov>; Templeton, Harvey M (DNR) <harvey.templeton@alaska.gov>; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>; abailey@petroleumnews.com; StephensD@akrr.com; greenbaumJ@akrr.com; alexandre.Lai@alyeska-pipeline.com; lonniea@amaktowing.com; jengen@bellingham-marine.com; rkemnitz@blm.gov; bobb@claalaska.com; BCharles@kniktribe.org; BrothertonPipeline@gmail.com; BryceEricksonConsult@Outlook.com; cwyatt@nrdc.org; dcollins@traylor.com; Dana\_Herndon@murkowski.senate.gov; Urban, David <David@ecosystempartners.com>; donkiely@computer.org; ikorhonen@earthjustice.org; ssaunders@earthjustice.org; LaCroix.Matthew@epa.gov; 404PNS-R10-OW@epa.gov; morgante.louis@epa.gov; eyak@redzone.org; Kristi.M.Ponozzo@faa.gov; jack.gilbertsen@faa.gov; Laura.A.Sample@faa.gov; mgstoddard@gci.net; hsteele@adv-eco.com; mdalton@hdrinc.com; Paul.McLarnon@hdrinc.com;

Budnik, John P CIV USARMY CEPOA (USA) < John.P.Budnik@usace.army.mil>;
msavoie@kinneticlabs.com; merco@mercomarine.com; mswalling@swalling.com;
mbarney@concretetech.com; monty.rogers@gmail.com; nsw@alaskan.com;
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Emily\_A\_Johnson@nps.gov; bella\_furr@nps.gov; leah\_schofield@nps.gov;
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pilots@seapa.com; Lisa.Lannigan@djc.com; info@setrust.net; srba@alaska.net; sheffield@aoga.org;
Miller, Jeff < Jeff\_Miller@treated-wood.org>; ecolaw@trustees.org; david.m.seris@uscg.mil;
todd.r.buck@uscg.mil; Richard.A.Sargent@uscg.mil; SMB-D17Juneau-LNM@uscg.mil;
Catherine.E.Cavender@uscg.mil; FW7\_POANotices@fws.gov; Leslie.Robbins@jacobs.com;
lvandommelen@trustees.org; Natalie.Dawson@audubon.org; audubonalaska@audubon.org;
bknight15@icloud.com; loretta@salmonstate.org

**Cc:** Atkins, Patrick Allen CIV USARMY CEPOA (USA) <Patrick.A.Atkins@usace.army.mil>; Pagemaster, Reg POA <regpagemaster@usace.army.mil>

**Subject:** POA-2006-00200, Marshall Airport, Poltes Slough

**CAUTION:** This email originated from outside the State of Alaska mail system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States.

PUBLIC NOTICE DATE: March 15, 2023

EXPIRATION DATE: April 14, 2023

REFERENCE NUMBER: POA-2006-00200

WATERWAY: **Poltes Slough** 

APPLICANT: Mr. Brett Nelson, Alaska Department of Transportation & Public Facilities (ADOT&PF), 2301 Peger Road, Fairbanks, AK 99709

AGENT: Ms. Melissa Jensen, ADOT&PF, 2301 Peger Road, Fairbanks, AK 99709

LOCATION: The project site is located at Latitude 61.8735, Longitude -162.0433; near Poltes Slough in Marshall, Alaska.

PURPOSE: The purpose of the proposed project as stated by the applicant, is to rehabilitate the runway to meet Federal Aviation Administration (FAA) standards and reestablish safe and efficient surfacing for aviation operations.

CONTACT: Please contact Allen Atkins at

(907) 753-2780, toll free from within Alaska at (800) 478-2712, by fax at (907) 753-5567, or by email at <a href="mailto:patrick.a.atkins@usace.army.mil">patrick.a.atkins@usace.army.mil</a>, if further information is desired concerning this notice.

All comments regarding this Public Notice should be sent to this address:

U.S. Army Corps of Engineers, Alaska District Regulatory Division / CEPOA-RD 2204 3rd Street, P.O. Box 6898 JBER, AK 99506-0898

If you desire to submit your comments by email, you should send it to the Project Manager's email as listed above or to <a href="mailto:regpagemaster@usace.army.mil">regpagemaster@usace.army.mil</a>. All comments should include the Public Notice reference number listed above.

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The full text of this public notice, as well as associated maps and drawings, are available on our website at:

http://www.poa.usace.army.mil/Missions/Regulatory/PublicNotices.aspx

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- \*\*NOTICE TO POSTMASTERS: It is requested that this notice be conspicuously and continually placed until the expiration date.

From: Corn, Rania L CIV USARMY USACE (USA)

To: Nelson, Brett D (DOT); Jensen, Melissa L (DOT); Martin, Kerri L (DOT)

Cc: Atkins, Patrick Allen CIV USARMY CEPOA (USA); Pagemaster, Reg POA; Yount, Lana CIV USARMY CEPOA (USA)

**Subject:** POA-2006-00200 Permit, Poltes Slough, Marshall

**Date:** Friday, May 26, 2023 10:19:02 AM

Attachments: POA-2006-00200 20230525 IP 2nd Transmittal Final.pdf

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Please do not submit comments about the project described in the attached document by replying to this email.

Comments about the project may be submitted to the appropriate Corps Project Manager as described in the document.

#### **Customer Survey:**

https://regulatory.ops.usace.army.mil/customer-service-survey/

#### Regulatory Contact Information:

http://www.poa.usace.army.mil/Missions/Regulatory/RegulatoryContacts.aspx

Very Respectfully,

Rania Corn
Regulatory Program Assistant
U.S. Army Corps of Engineers, Regulatory Division
P.O. Box 6896
JBER, AK 99506
(907) 753-5721

From: Nelson, Brett D (DOT)

To: Jensen, Melissa L (DOT)

Subject: FW: POA-2006-00200 v1.0, Poltes Slough - 401 WQ Certificate

 Date:
 Wednesday, April 12, 2023 7:14:21 AM

 Attachments:
 POA-2006-00200 v1.0 cert.pdf

image002.png

FYI

From: Weimer, Willow A (DEC) <willow.weimer@alaska.gov>

**Sent:** Tuesday, April 11, 2023 5:21 PM

Cc: Petersen, Zoe M (DOT) <zoe.petersen@alaska.gov>; Brase, Audra L (DFG)

<audra.brase@alaska.gov>; ak\_fisheries@fws.gov; LaCroix, Matthew <LaCroix.Matthew@epa.gov>;

McDonald.Kelly@epa.gov; DEC 401 Cert (DEC sponsored) <dec-401cert@alaska.gov>

Subject: POA-2006-00200 v1.0, Poltes Slough - 401 WQ Certificate

#### Mr. Nelson,

In accordance with Clean Water Act Section 401 and the Alaska Water Quality Standards, the Department of Environmental Conservation, Division of Water, is issuing the attached Certificate of Reasonable Assurance for work in or affecting navigable waters of the U.S., associated with the above subject named project.

Please find attached DEC's 401 Water Quality Certificate for the project.

Thank you, WILLOW



Willow Weimer Alaska Department of Environmental Conservation Wastewater Discharge Authorization Program

DIVISION OF WATER OFFICE 907.269.6096

WILLOW.WEIMER@ALASKA.GOV

555 CORDOVA STREET ANCHORAGE, AK 99501