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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WETLANDS AND WATERS DELINEATION REPORT

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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

2007 Supplement	*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. Fish and Wildlife Service
USGS	U.S. Geological Survey
WB	Waterbody
WD	Wetland Determination
WETS	Climate Analysis for Wetlands

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).

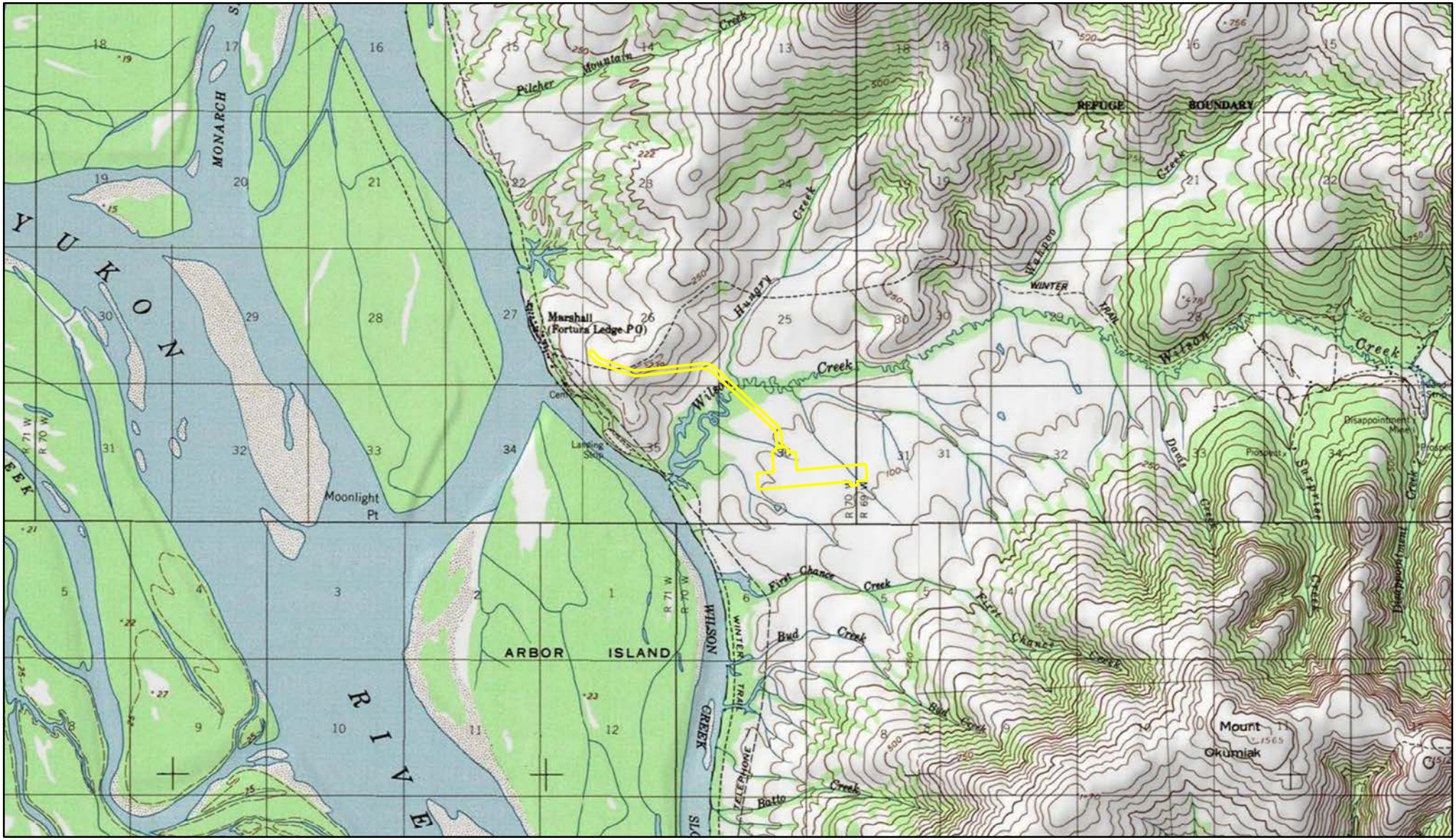
1.1 STUDY AREA LOCATION

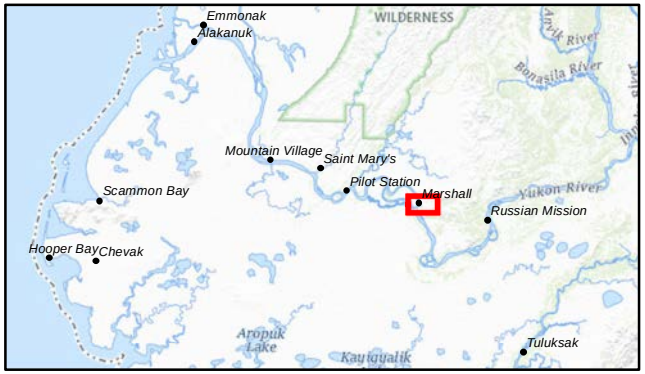
The 120-acre study area is located near the city of Marshall, approximately 75 miles north of Bethel on the lower Yukon River, and consists of the Marshall Airport, located east of the town, and the 1.75-mile access road to the airport (Figure 1).

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)
Seward	21N	69W	31	61.8735	-162.0433
		70W	25, 26, 36		





Study Area

0 0.5 1 1.5 Miles

(At original document size of 8.5x11)

1:63,360 1 inch = 1 miles

N W E S

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Project
Marshall Airport Improvement Project

Figure
Location

Figure Number
1

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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.

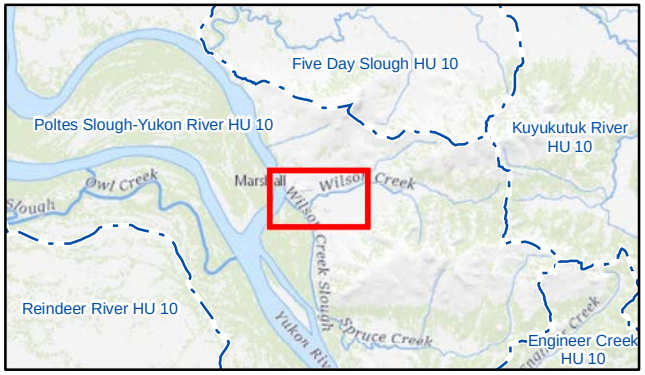
The entire section of the study area that was covered by the NWI was mapped as freshwater emergent wetland. The NWI mapped one small stream along the northern edge of the area it covered, covering less than 0.1 acres. The Marshall Airport was built after the NWI mapping was completed.

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
Total Wetlands and Waters		58.6	48.7
No NWI Data			
	NONE	61.6	51.3
Total		**120.2**	**100.0**

*Apparent inconsistencies in sums are the results of rounding



Study Area

HU 10 Watershed

NHD Flowline

NWI Mapping by Wetland Type

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Riverine (Stream/River)

0 1,000 2,000 3,000 Feet

(At original document size of 8.5x11)

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

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Figure
NWI & NHD Mapping

Figure Number
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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).

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.

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

Non-Relatively Permanent Waters (Non-RPW): 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

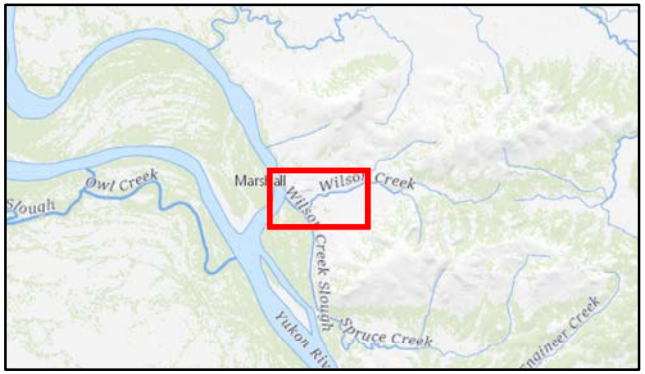
One published National Cooperative Soil Survey report covers the project study area; The Digital General Soil Map of the United States (STATSGO2) (Soil Survey Staff 2022). The STATSGO2 survey provides general level soils information for those areas of Alaska lacking a more detailed soil survey that is 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).

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-Boreal Upland and Maritime Upland-Rounded Mountains (35% hydric)
- 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)

0 1,000 2,000 3,000 Feet

(At original document size of 8.5x11)

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

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Figure
Soils Mapping

Figure Number
3

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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

Month	Total Monthly Accumulated Precipitation (Inches)	Average Monthly Accumulated Precipitation 1991-2020 (Inches)	Percent of Average Precipitation	30% Chance 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.

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:

1. 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:

- 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.

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).

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

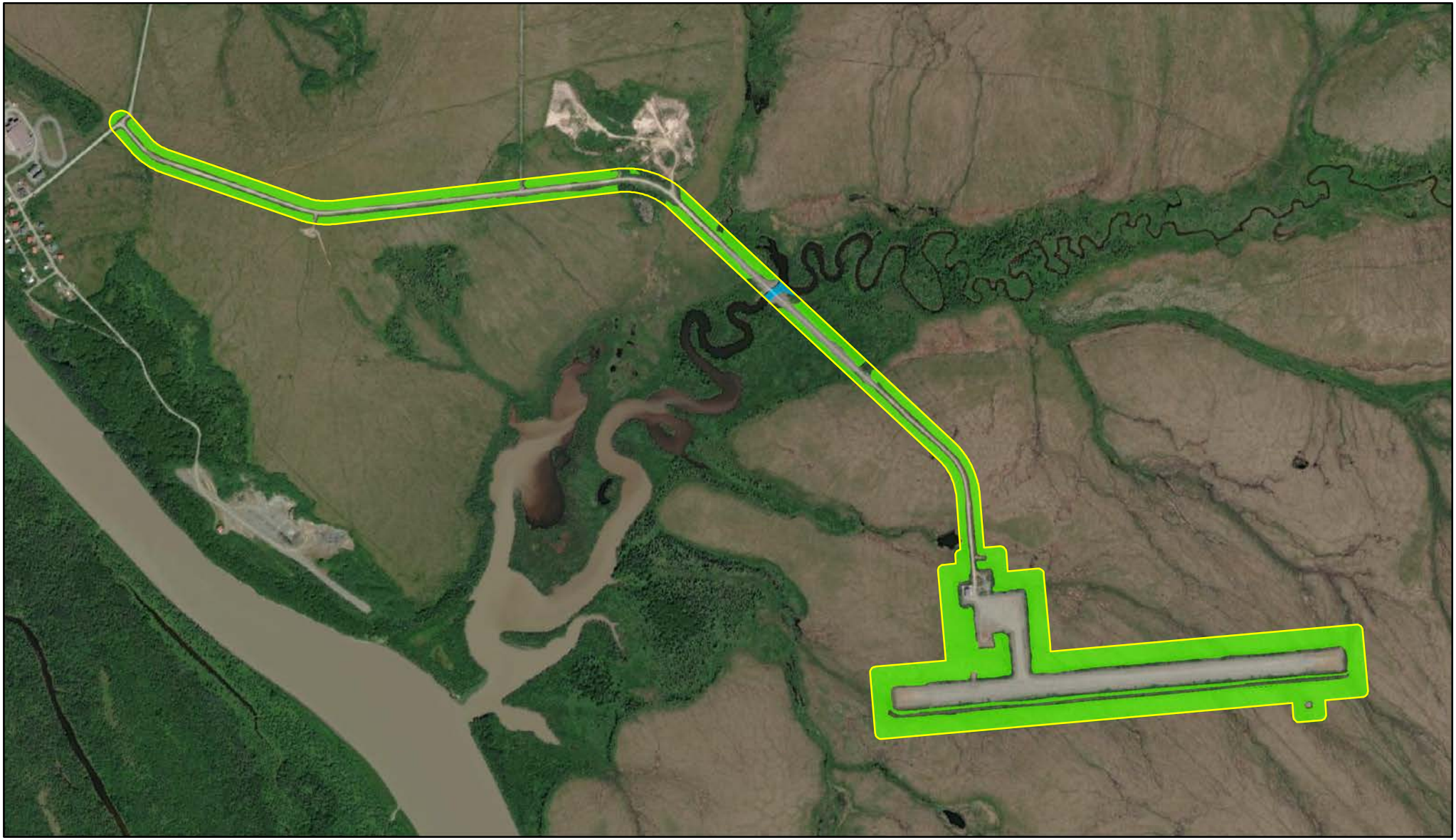
Status	Acres	Percent of Study Area
Wetlands	74.3	61.8
Waters	0.4	0.3
Total Wetlands and Waters	**74.7**	**62.1**
Uplands	45.5	37.9
Total	**120.2**	**100.0**

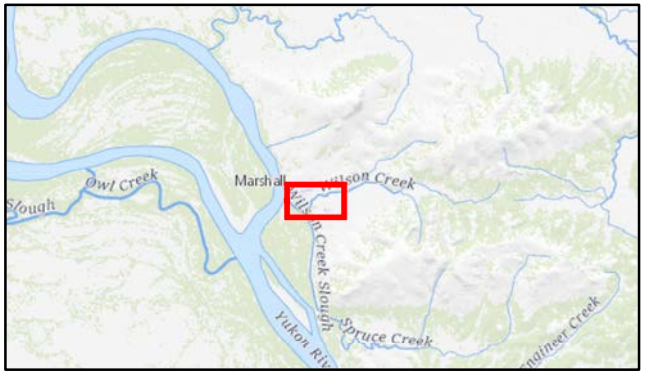
Extensive tussock tundra and low shrub wetlands were found throughout the gentle hillsides around Marshall and the study area, while tall willows and alder wetlands were within the floodplains of the Wilson and Hungry Creeks.

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.





- Study Area
- Stream
- Waterbody
- Wetland

0 500 1,000 1,500 Feet

(At original document size of 8.5x11)

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

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Figure
Wetlands and Waters Overview

Figure Number
4

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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				
Deciduous Shrub	PSS1	1.0	0.8	1.3
	PSS1/EM1	47.5	39.5	63.6
	PSS1/3B	1.2	1.0	1.6
Total Deciduous Shrub		**49.7**	**41.3**	**66.5**
Evergreen Scrub	PSS3/EM1	16.5	13.7	22.1
	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
Total 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**	

*Apparent inconsistencies in sums are the results of rounding.

3.1.2 Project Hydrogeomorphic Classification

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

The HGM classification is based on a wetland's: (1) position in the landscape or geomorphic setting, (2) dominant source of water, and (3) hydrodynamics of the water in the wetland (Brinson 1993). The purpose of the HGM classification is to provide a mechanism to account for the natural variation inherent 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**

*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.

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

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

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).

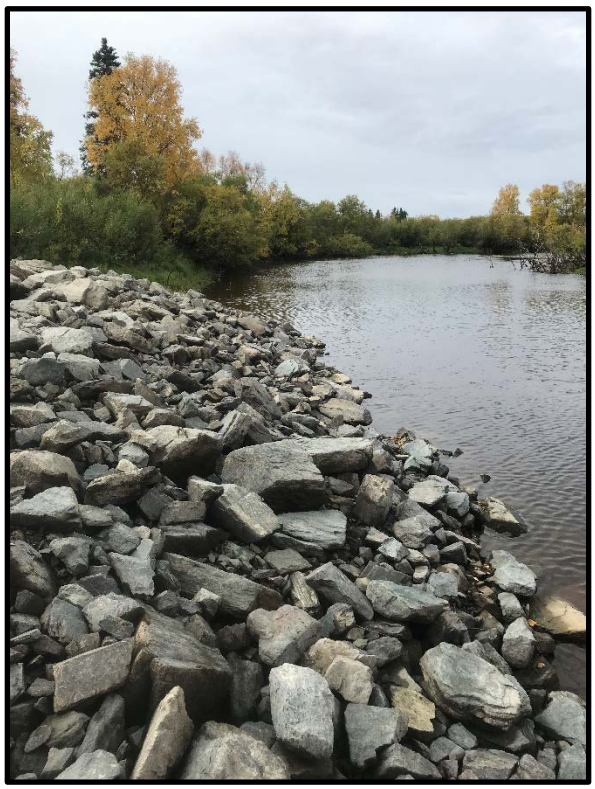
Four depressional features occur in the study area. One depressional wetland surrounds a depressional pond along the western edge of the airport entrance. The remaining three depressional wetlands occur in small concavities adjacent to the airport where water is able to pond.

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.

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

*Apparent inconsistencies in sums are the results of rounding.

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 Forest	Open Mixed Forest	OMF	-	0.7	-	0.6
	Total Mixed Forest		**-**	**0.7**	**-**	**0.6**
Shrub	Closed Tall Alder Willow Shrub	CTAWS	-	0.9	-	0.7
	Closed Tall Willow Shrub	CTWS	-	0.1	-	0.1
	Deciduous Shrub and Sapling Regrowth	DSSR	-	8.6	-	7.2
	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**
Herbaceous	Mesic Herbaceous	MH	0.1	1.7	3.2	1.4
	Wet Herbaceous	WH	7.3	7.3	100.0	6.1
		Total Herbaceous	**7.3**	**8.9**	**82.0**	**7.4**
Land Cover	Barren	BARE	-	26.5	-	22.1
		Total Land Cover	**-**	**26.5**	**-**	**22.1**
Water	Open Water	OW	0.4	0.4	100.0	0.3
		Total Water Cover	**0.4**	**0.4**	**100.0**	**0.3**
		Total	**74.7**	**120.2**	**62.1**	**100.0**

*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.

4.0 REFERENCES

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APPENDICES

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

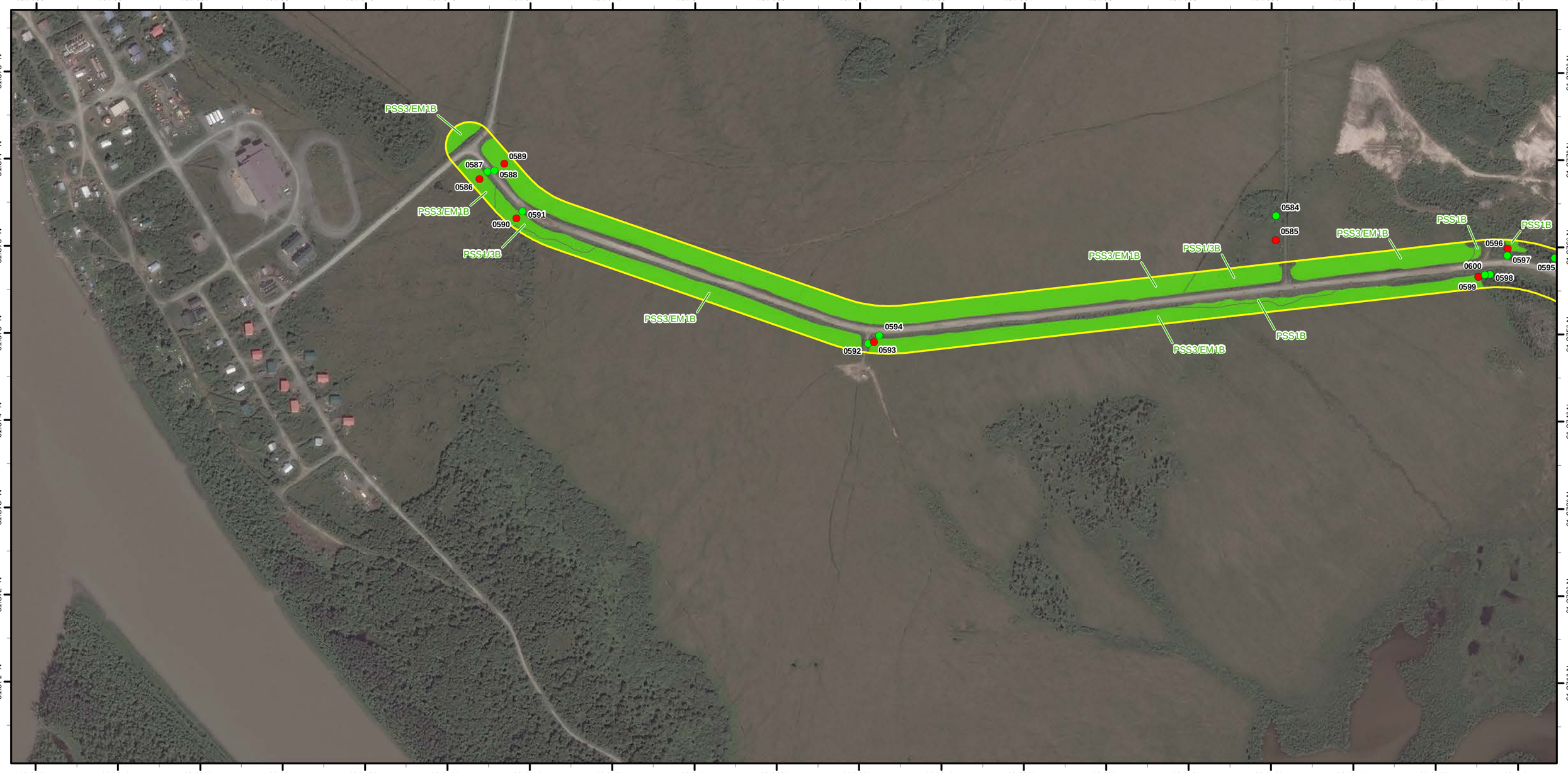
WETLANDS AND WATERS DELINEATION REPORT

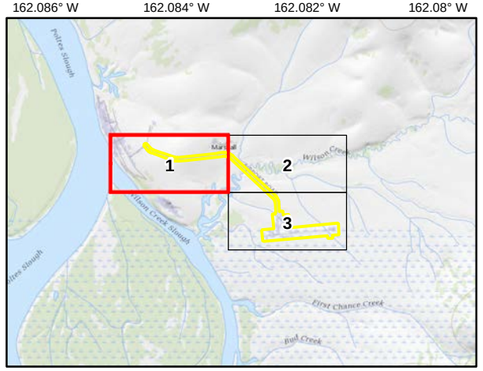
Appendix A Plant List

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

Appendix B FIELD DATA FORMS AND PHOTOS

Appendix C WETLANDS AND WATERS DETAIL FIGURES





All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

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Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study Area

Plot Status
- RPW
- Upland
- Wetland

Wetlands and Waters by Hydrogeomorphic Classification
- Depressional
- Slope
- Riverine
- Riverine Channel

0 200 400 600 Feet
(At original document size of 11x17)
1:4,800 1 in = 400 feet

N W E S

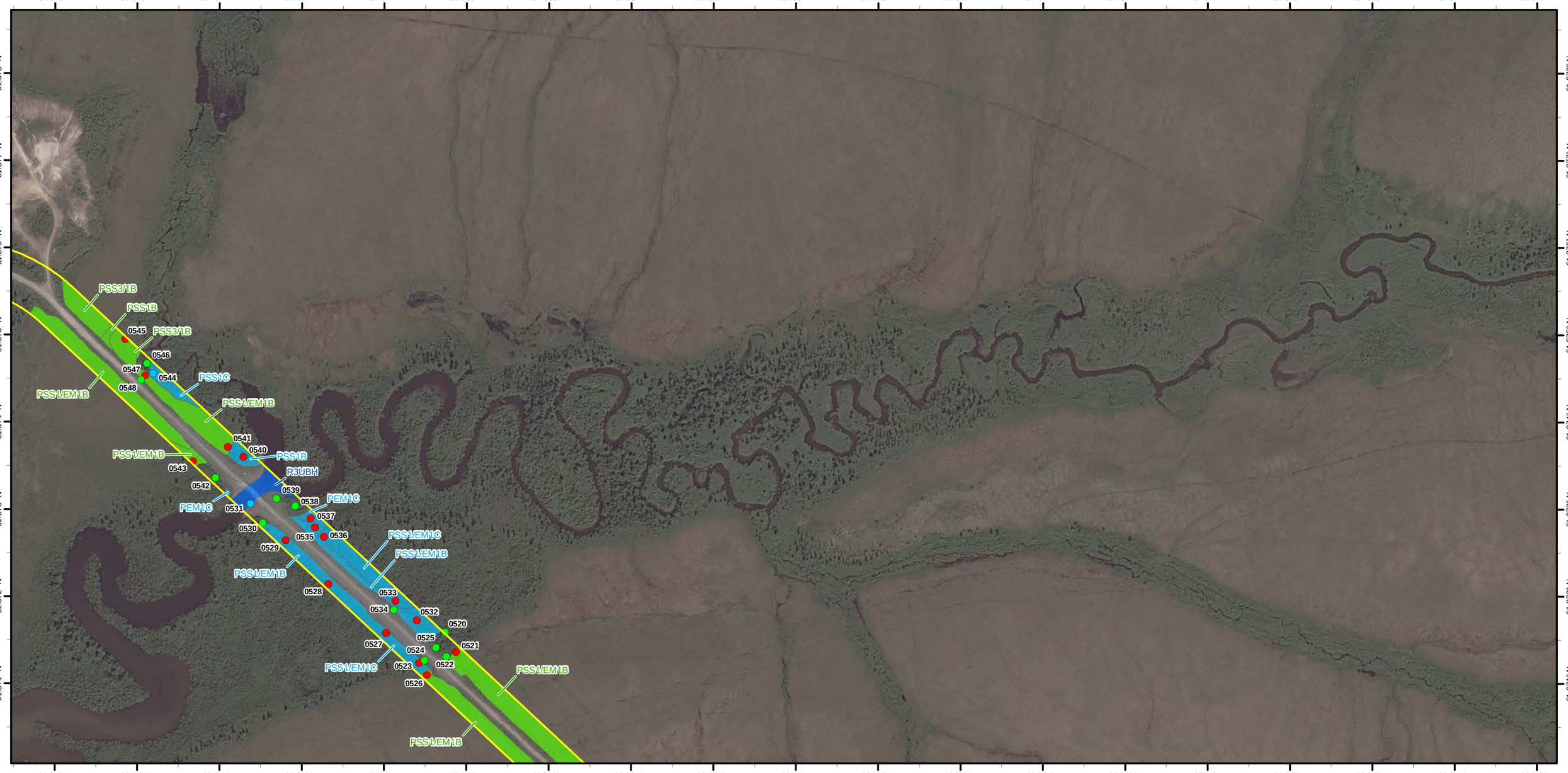
Client
Alaska Department of Transportation and Public Facilities

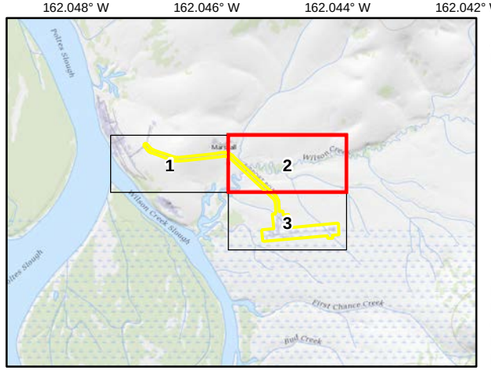
Project
Marshall Airport Improvement Project

Figure
Wetlands and Waters Detail

Figure Number
C - 1

Stantec





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Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study Area

Plot Status

- RPW
- Upland
- Wetland

Wetlands and Waters by Hydrogeomorphic Classification

- Depressional
- Slope
- Riverine
- Riverine Channel

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(At original document size of 11x17)

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Client

Alaska Department of Transportation and Public Facilities

Project

Marshall Airport Improvement Project

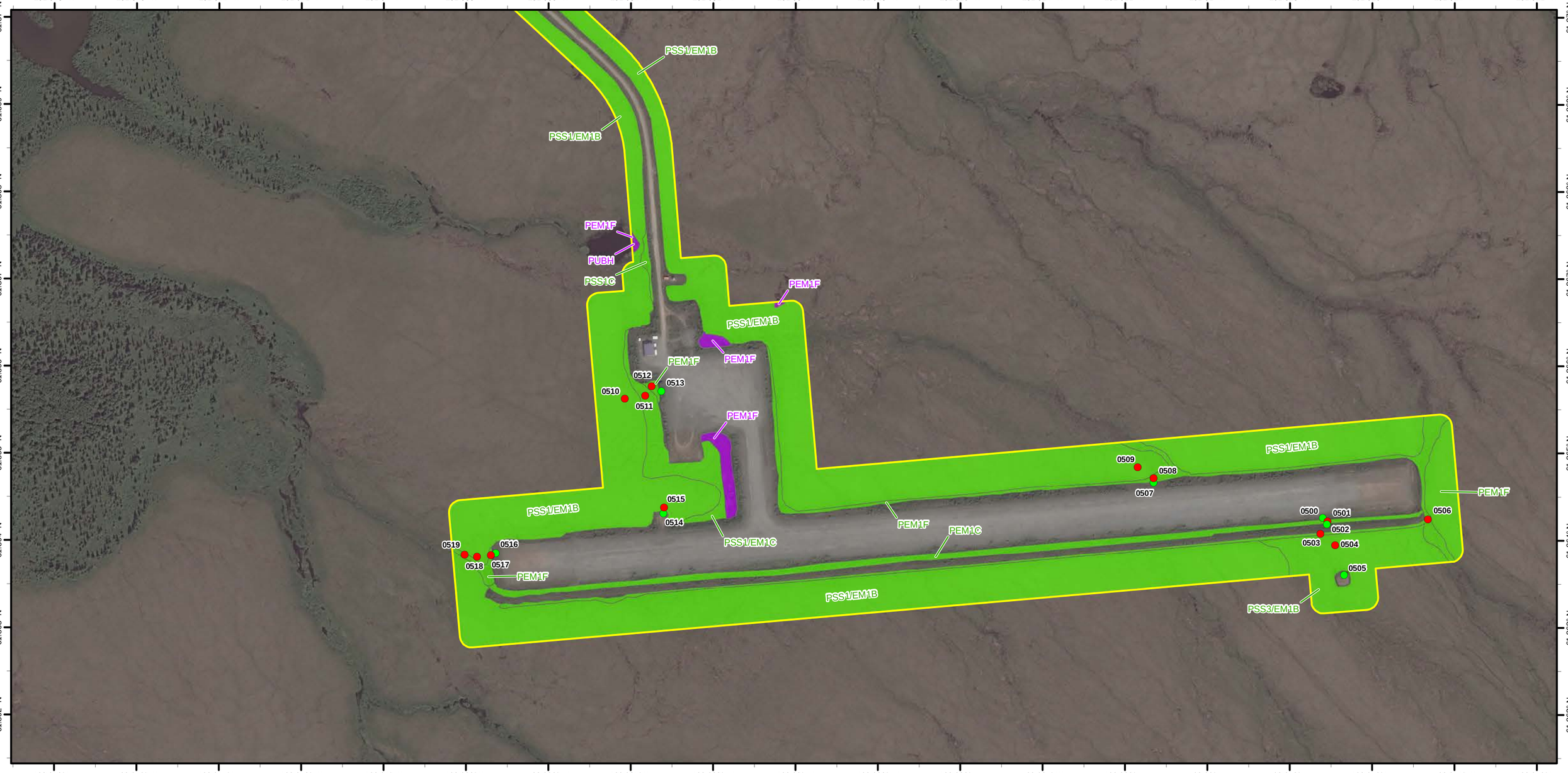
Figure

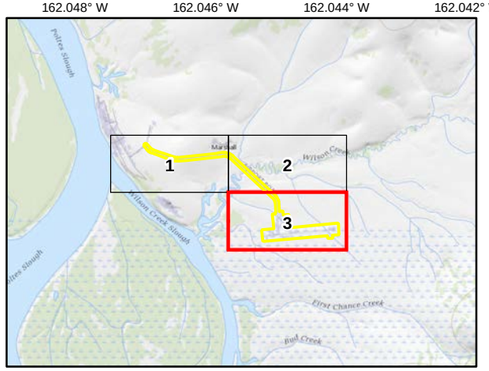
Wetlands and Waters Detail

Figure Number

C - 2

Stantec





All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

Study Area

Plot Status
- RPW
- Upland
- Wetland

Wetlands and Waters by Hydrogeomorphic Classification
- Depressional
- Slope
- Riverine
- Riverine Channel

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(At original document size of 11x17)

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N W E S

Imagery: WorldView-2, 7/12/21
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Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Client
Alaska Department of Transportation and Public Facilities

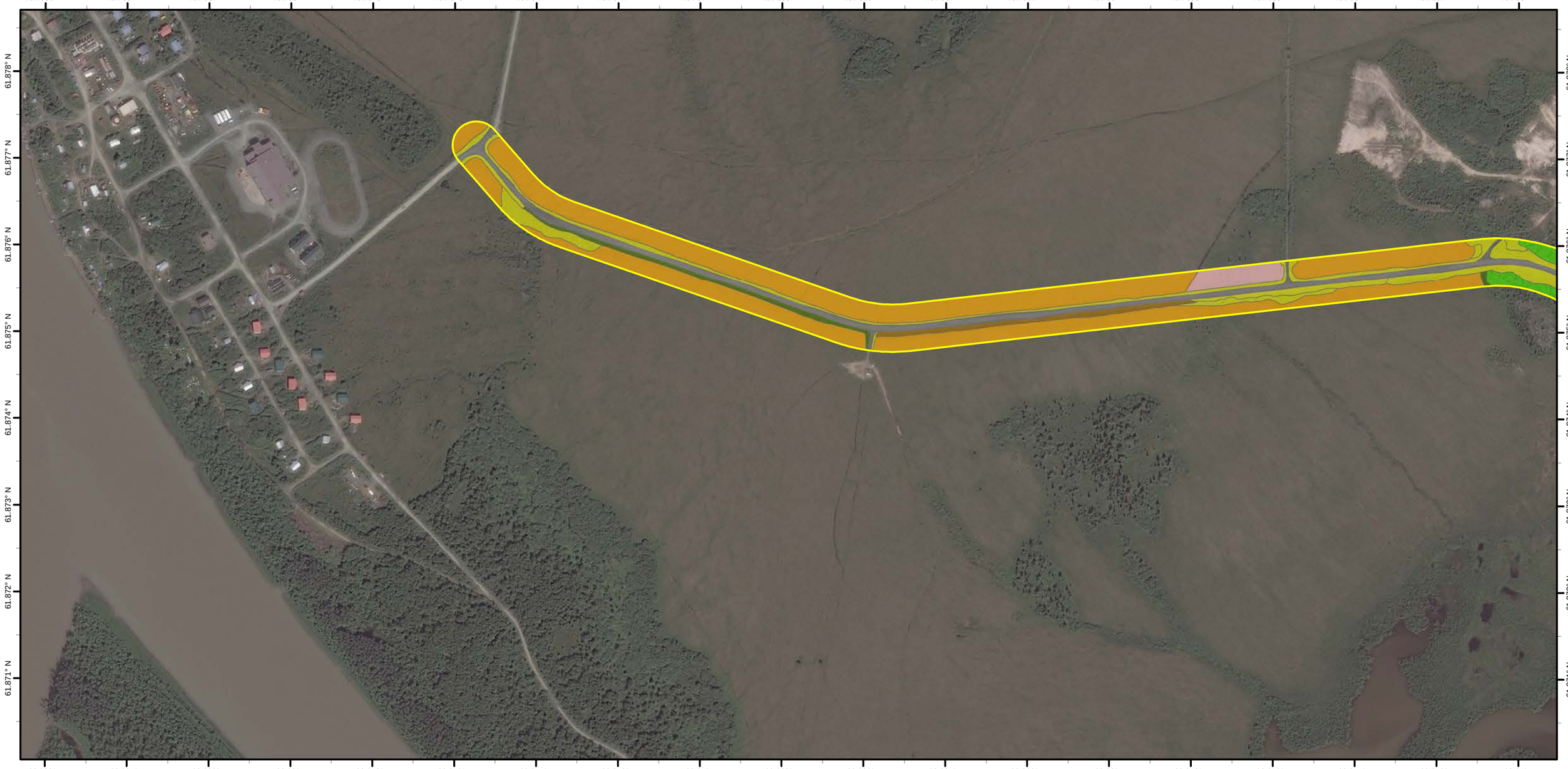
Project
Marshall Airport Improvement Project

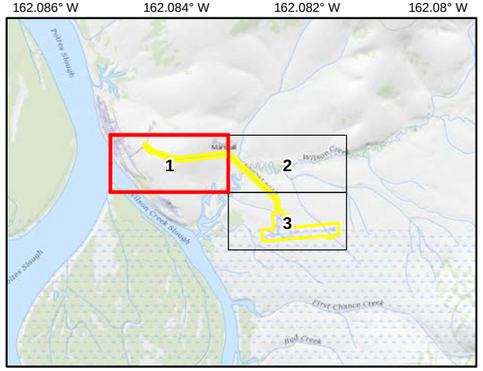
Figure
Wetlands and Waters Detail

Figure Number
C - 3

Stantec

Appendix D VEGETATION DETAIL FIGURES





Vegetation Groups shown here are a mix of Vegetation Groups and Vegetation Types shown in Tables 10.

They have been categorized to simplify viewing by grouping like vegetation types with similar percentages of Wetlands.

Imagery: WorldView-2, 7/12/21
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study Area

Vegetation Group

- Mixed Forest
- Alder-Willow Shrub
- Willow Shrub
- Deciduous Shrub and Sapling Regrowth
- Open Mixed Shrub Sedge Tundra
- Shrub Birch Willow
- Dwarf Shrub Tundra
- Mesic Herbaceous
- Wet Herbaceous
- Barren
- Open Water

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(At original document size of 11x17)

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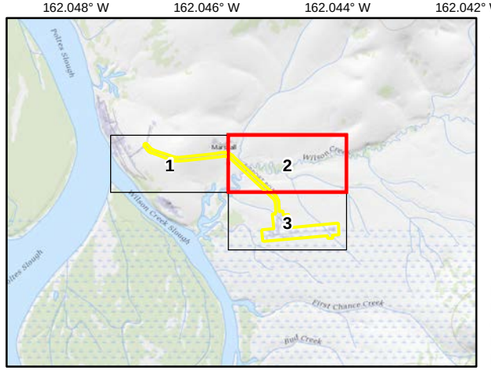
Client
Alaska Department of Transportation and Public Facilities

Project
Marshall Airport Improvement Project

Figure
Vegetation Detail

Figure Number
D - 1

Stantec



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Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study Area

Vegetation Group

- Mixed Forest
- Alder-Willow Shrub
- Willow Shrub
- Deciduous Shrub and Sapling Regrowth
- Open Mixed Shrub Sedge Tundra
- Shrub Birch Willow
- Dwarf Shrub Tundra
- Mesic Herbaceous
- Wet Herbaceous
- Barren
- Open Water

0 200 400 600 Feet

(At original document size of 11x17)

1:4,800 1 in = 400 feet

N W E S

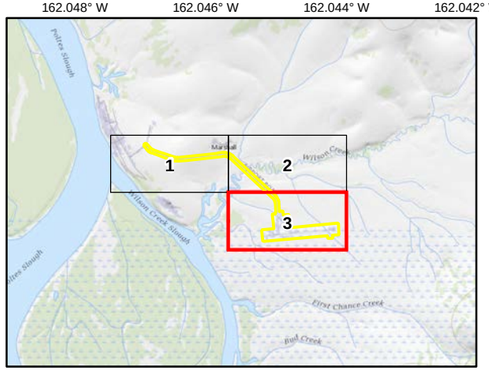
Client
Alaska Department of Transportation and Public Facilities

Project
Marshall Airport Improvement Project

Figure
Vegetation Detail

Figure Number
D - 2

Stantec



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Imagery: WorldView-2, 7/12/21
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study Area

Vegetation Group

- Mixed Forest
- Alder-Willow Shrub
- Willow Shrub
- Deciduous Shrub and Sapling Regrowth
- Open Mixed Shrub Sedge Tundra
- Shrub Birch Willow
- Dwarf Shrub Tundra
- Mesic Herbaceous
- Wet Herbaceous
- Barren
- Open Water

0 200 400 600 Feet

(At original document size of 11x17)

1:4,800 1 in = 400 feet

N W E S

Client
Alaska Department of Transportation and Public Facilities

Project
Marshall Airport Improvement Project

Figure
Vegetation Detail

Figure Number
D - 3

Stantec

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 – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/11/2022
Applicant/Owner: ADOT Sampling Point #: 500
Investigator(s): ZH / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.864262 Long. 162.017222 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Runway Fill Slope (%): 20 Aspect: S
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: U
Photo nos./descriptions: NE SW Soil Y2 Camera #: Veg Type (Viereck Level 4 or other): IIC2
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X	Remarks (e.g., marginal?):	
Wetland Hydrology Present?	Yes ___	No X		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pop. bal.	15	Y	FACU	7. Vac. vit.	3		FAC
2. Sal. arb.	5	Y	FACW	8. Emp. nig.	1		FAC
3. Sal. bar.	5	Y	FAC	9. Bet. g. pa.	5	Y	FAC
4. Vac. uli.	10	Y	FAC	10. Aln. s. in.	3		FAC
5. Rho. tom.	5	Y	FACW	11.			
6. Bet. nan.	3		FAC	12.			

Total Sapling/Shrub Cover: 55
50% of total cover: 27.5 20% of total cover: 11

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Equ. arv.	10	Y	FAC	12.			
2. Cka. ang.	5		FACU	13.			
3. Des. ca.	10	Y	FAC	14.			
4. Eri. vag.	3		FACW	15.			
5. Ped. sp.	1		-	16.			
6. Cal. can.	5		FAC	17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 34
50% of total cover: 17 20% of total cover: 6.8
Circular 1/10-ac plot ___ or other plot dimension: 5x5 % of bare ground: 15
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)
Total Number of Dominant Species Across All Strata: 8 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 87.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	X1=	
FACW species	13	X2=	26
FAC species	55	X3=	165
FACU species	20	X4=	80
UPL + NL species	-	X5=	-
Column Totals:	88 (A)		271 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
N Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Plot located ≈ 5' upslope from toe of slope of runway prism

SOIL

Sampling Point #: 500

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-1	Oi									
1-2	A	10YR2/2	100	-	-	-	-	GRLO	-	Fill
2-20	C	10YR5/4	100	-	-	-	-	GRLO	-	Fill

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1.
2.
3. No hydric soil indicators observed; Fill

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):
Surface Water Present? Yes ____ No X Depth **of** water (in.) _____
Water Table Present? Yes X No ____ Depth **to** water (in.) 19
Seeping in at that depth but not yet filled?: ____
Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 17
Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Heavy recent rains. Wetter than normal. Saturation & Water Table not w/in upper 12".

PHOTO REPORT

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	**HGM**	N/A	**Longitude (DD)**	-162.01722

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: Kusilvak CA Date: 9/11
Applicant/Owner: ADOT Sampling Point #: 501
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) Gl. 8104221 Long. 162.017106 ± ' NAD 83 Recorded on GPS?: X Marked on map?: X Field Map #:
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Valley Bottom Slope (%): 0 Aspect: N/A
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: linear / convex / (concave) NWI classification: PEMIC
Photo nos./descriptions: NESW 2 501.1 Camera #: Veg Type (Viereck Level 4 or other): III A3f
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet. nan.	10	Y	FAC	7.			
2. Vac. uli.	5	Y	FAC	8.			
3. Sal. arb.	5	Y	FACW	9.			
4. Sal. sco.	5	Y	FAC	10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 25
50% of total cover: 12.5 20% of total cover: 5

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	45	Y	FAC	12.			
2. Equ. flu.	10		OBL	13.			
3. Car. aqu.	10		OBL	14.			
4. Equ. arv.	3		FAC	15.			
5. Des. cae.	5		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 73
50% of total cover: 36.5 20% of total cover: 14.6
Circular 1/10-ac plot ___ or other plot dimension: 10x10 % of bare ground: 5
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	X1=	20
FACW species	5	X2=	10
FAC species	73	X3=	219
FACU species	0	X4=	0
UPL + NL species	0	X5=	0
Column Totals:	98 (A)		249 (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: S01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-5	Oe									
5-17	Bg	10G4/1	100	-	-	-	-	GRLO	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- X Hydrogen Sulfide (A4) (within 12"of mineral surface; @ 5 " in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3. Would meet AK Gleyed w/out Hue 5Y underlying & Alpha-Pos if problematic.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- Y Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- Y Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- Y Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) – Depression
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ____ Depth **of** water (in.) 1"

Water Table Present? Yes X No ____ Depth **to** water (in.) 10"

Seeping in at that depth but not yet filled?: ?

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 5

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
H_2O's in low spots. Iron sheen on surface water/staining on veg.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.01711

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/11/2022
Applicant/Owner: ADOT Sampling Point #: SD2.
Investigator(s): ZH / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.864187 Long. 162.017122 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Berm Slope (%): 2 Aspect: W
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: U
Photo nos./descriptions: NESW 2501 Camera #: Veg Type (Viereck Level 4 or other): IIC2
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	Remarks (e.g., marginal?):

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh ≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pop. tre.	3		FACU	7. Pop. bal.	3		FACU
2. Pic. gla.	1		FACU	8. Sal. pul.	10	Y	FACW
3. Vac. uli.	10	Y	FAC	9. Bet. gla.	5		FAC
4. Spi. ste.	5		FACU	10.			
5. Rho. tom.	15	Y	FACW	11.			
6. Bet. nan.	3		FAC	12.			

Total Sapling/Shrub Cover: 55
50% of total cover: 27.5 20% of total cover: 11

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Equ. arv.	25	Y	FAC	12.			
2. Des. cae.	15	Y	FAC	13.			
3. Eri. ang.	3		OBL	14.			
4. Cha. ang.	3		FACU	15.			
5. Cal. can.	10		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 56
50% of total cover: 28 20% of total cover: 11.2
Circular 1/10-ac plot ___ or other plot dimension: 10x10 % of bare ground: ___
% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes ___%
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	X1=	3
FACW species	25	X2=	50
FAC species	68	X3=	204
FACU species	15	X4=	60
UPL + NL species	—	X5=	—
Column Totals:	111 (A)		317 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

Berm along South end of runway ≈ 5' higher than surrounding.

SOIL

Sampling Point #: SO2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/ neg)	Remarks (or use comment number)
0-2	Oi									
2-12	B1	10YR4/3	100	-	-	-	-	Loam	N	Fill
12-20	B2	10YR4/2	75	7.5YR 3/3	25	C	M	Loam	N	↓

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- Black Histic (A3)
- Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- N Alaska Color Change[4] (TA4)
- Alaska Alpine Swales (TA5)
- Alaska Redox with 2.5Y Hue
- AK Gleyed without Hue 5Y or Redder Underlying Layer
- α,α-dipyridyl positive (see pg. 91)
- Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: NM
Depth (inches): NA

Drainage Class: MWD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1.
2.
3. No primary hydro for problematic indicators + not appropriate landscape position = berm.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

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? (includes capillary fringe) Yes ____ No X Depth **to** sat. (in.) _____
Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Profile moist but not saturated.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.01712

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.01728

Photo Type: Vegetation Direction: E

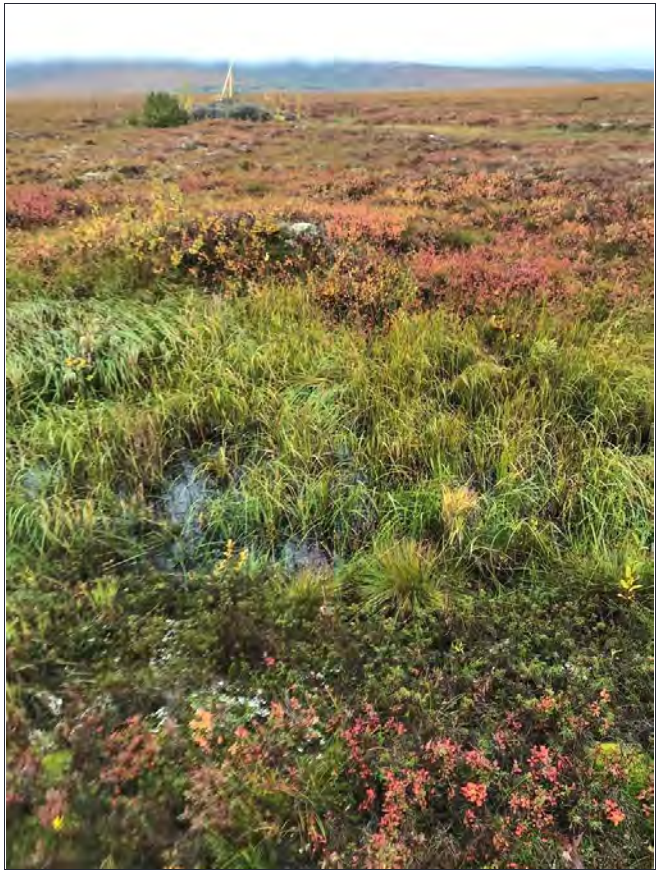


Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/11/2022
Applicant/Owner: ADOT Sampling Point #: 504
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.863950 Long. 162.016920 ± ' NAD 83 Recorded on GPS?: Y Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Valley Bottom Slope (%): 3 Aspect: N
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSS3/EM1B
Photo nos./descriptions: NESW S:1X2 Camera#: Veg Type (Viereck Level 4 or other): IIC2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain: Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No	**Is the sampled area within a wetland?** Yes X No
Hydric Soil Present?	Yes X	No	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover:
50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet. nan.	10		FAC	7.			
2. Emp. nig.	15	Y	FAC	8.			
3. Rho. tom.	20	Y	FACW	9.			
4. Vac. uli.	15	Y	FAC	10.			
5. And. pol.	5		FACW	11.			
6. Vac. oxy.	3		OBL	12.			

Total Sapling/Shrub Cover: 68
50% of total cover: 34 20% of total cover: 13.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	30	Y	FACW	12.			
2. Eri. ang.	20	Y	OBL	13.			
3. Ped. sp.	1		-	14.			
4. Car. big.	1		FAC	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 52
50% of total cover: 26 20% of total cover: 10.4

Circular 1/10-ac plot X or other plot dimension: % of bare ground:
% Cover of Wetland Bryophytes % (where applicable) Total Cover of Bryophytes %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	23	X1=	23
FACW species	55	X2=	110
FAC species	41	X3=	123
FACU species	-	X4=	0
UPL + NL species	-	X5=	0
Column Totals:	119 (A)		256 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
Lichen ≈ 15%

SOIL

Sampling Point #: SO4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-5	Oi	~	~	~	~	~	~	~	NT	
5-23	Oe	~	~	~	~	~	~	~	↓	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- Y Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- Y Hydrogen Sulfide (A4) (within 12"of mineral surface; @ 11" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: VPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- Y Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) ____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- NT Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummocky
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ____ Depth **of** water (in.) 1"

Water Table Present? Yes X No ____ Depth **to** water (in.) 5"

Seeping in at that depth but not yet filled?: ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 4" Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Some H_2O in low areas.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.01692

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

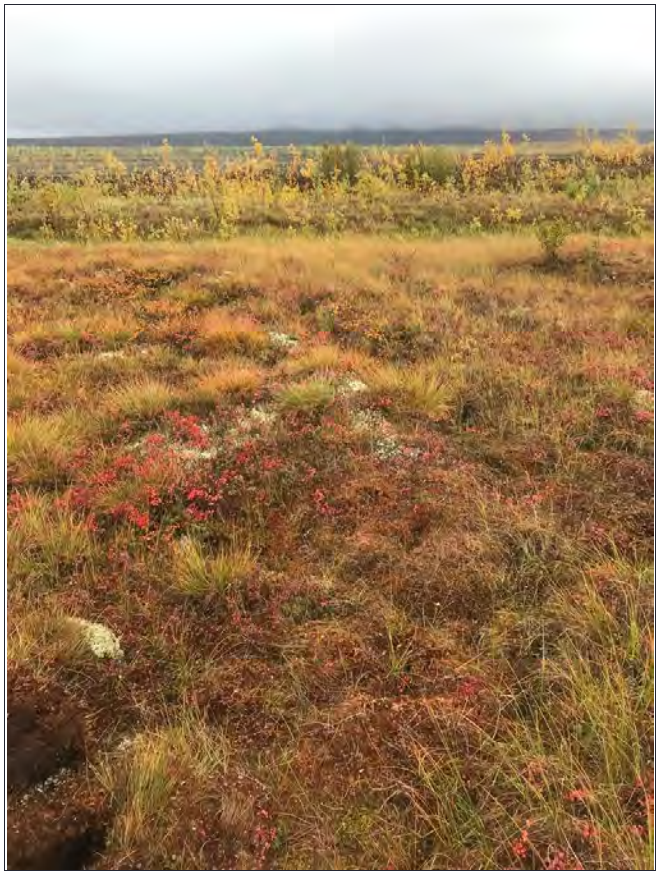


Photo Type: Vegetation Direction: N

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.0167

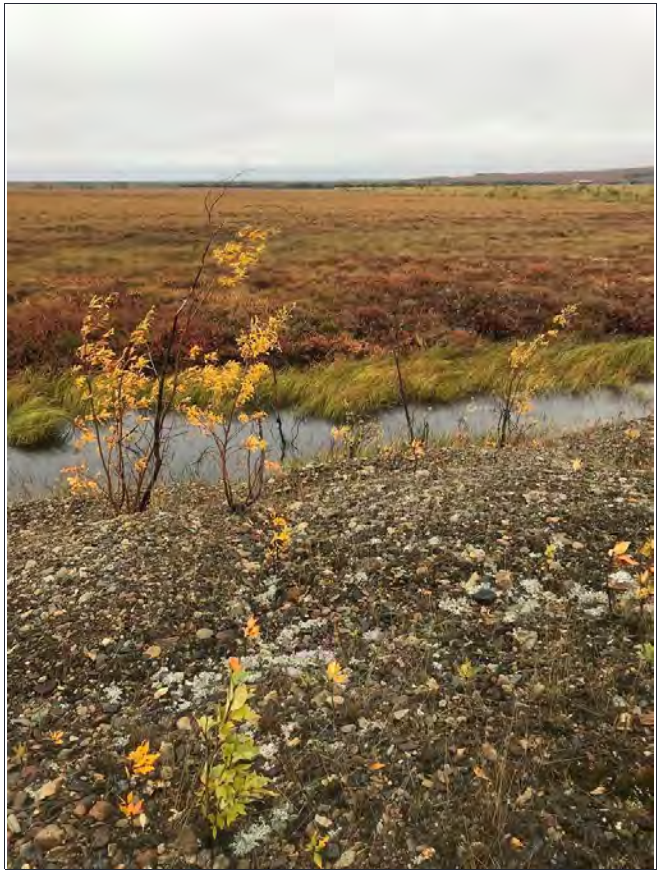


Photo Type: Hydrology Direction: W

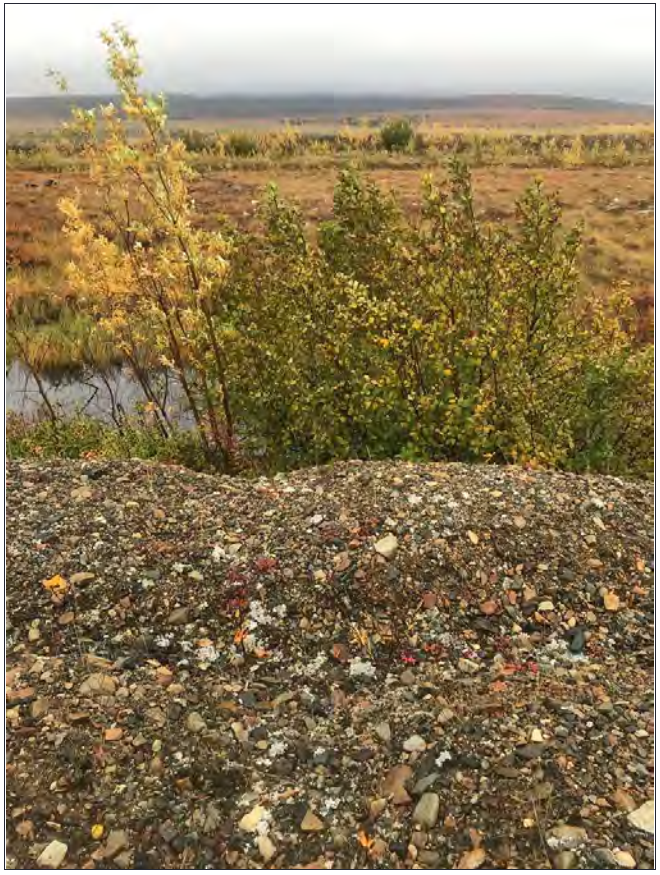


Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.01466

Photo Type: Hydrology Direction: S

Photo Type: Hydrology Direction: W

Photo Type: Vegetation Direction: N

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kosilvak CA Date: 9/11/2022
Applicant/Owner: ADOT Sampling Point #: 507
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.864666 Long. 162.021331 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Prism (fill) Slope (%): 20 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: U
Photo nos./descriptions: NESW 5s, 1 x 2 Camera#: Veg Type (Viereck Level 4 or other): IIC2
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain. Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No	**Is the sampled area within a wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	Remarks (e.g., marginal?):

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover:
50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet. nan.	10	Y	FAC	7. Aln. sin.	1		FAC
2. Sal. pul.	10	Y	FACW	8.			
3. Rhu. tom.	7		FACW	9.			
4. Vac. uli.	5		FAC	10.			
5. Pop. tre.	1		FACU	11.			
6. Sal. bar.	5		FAC	12.			

Total Sapling/Shrub Cover: 39
50% of total cover: 19.5 20% of total cover: 7.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Des. cal.	25	Y	FAC	12.			
2. Cha. ang.	7		FACU	13.			
3. Jun. cas.	5		FACW	14.			
4. Poa. sp.	1		-	15.			
5. Eri. vag.	3		FACW	16.			
6. Eri. ang.	1		OBL	17.			
7. Equ. flu.	1		OBL	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 43
50% of total cover: 21.5 20% of total cover: 8.6
Circular 1/10-ac plot ___ or other plot dimension: 5X5 % of bare ground:
% Cover of Wetland Bryophytes ____% Total Cover of Bryophytes ____%
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	X1=	2
FACW species	25	X2=	50
FAC species	46	X3=	138
FACU species	8	X4=	32
UPL + NL species	0	X5=	0
Column Totals:	81 (A)		222 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
≈ 5' from toe of slope, ≈ 4' higher than toe. Very close to wetland boundary.

SOIL

Sampling Point #: S07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Fill	10YR 2/2	100					GRLO		
2-4	↓	10YR 5/4	100					GRLO	N	
4-20	↓	10YR 5/4	85					GRLO	N	
		5Y 5/1	15					↓	N	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- Black Histic (A3)
- Hydrogen Sulfide (A4) (within 12"of mineral surface; @_____" in this pit
- Thick Dark Surface (A12)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- Alaska Alpine Swales (TA5)
- Alaska Redox with 2.5Y Hue
- AK Gleyed without Hue 5Y or Redder Underlying Layer
- α,α-dipyridyl positive (see pg. 91)
- Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: MWD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1.
2.
3. Thixotrophic. Gravelly loam fill of airstrip fill prism.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- X High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)

- N Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- Drainage Patterns (B10) _____
- Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No X Depth **of** water (in.) 1"*

Water Table Present? Yes X No ____ Depth **to** water (in.) 8

Seeping in at that depth but not yet filled?: ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 6

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
* 1" in slumps of airstrip fill prism.

Heavy rains, wetter than normal.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.02133

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.02133

Photo Type: Hydrology Direction: N

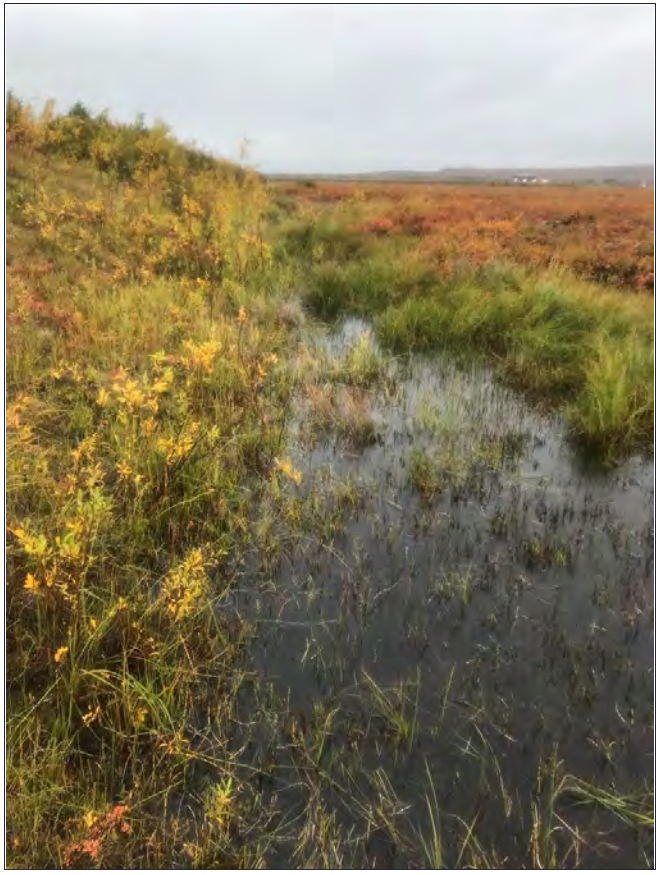


Photo Type: Hydrology Direction: W

Photo Type: Vegetation Direction: E

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/11

Applicant/Owner: APOT Sampling Point #: 509

Investigator(s): ZH/BL Firm: HDR Alaska, Inc.

Lat. (dec.°) 61.864838 Long. 162.021714 ±___' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #: ____

Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Valley Bottom Slope (%): 2 Aspect: N

Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: linear / (convex) / concave NWI classification: PSS1/EM1B

Photo nos./descriptions: NESW 2-Soil Camera#: ____ Veg Type (Viereck Level 4 or other): IIC2a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X	No ___		Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes Y	No ___		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Non.				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ____

50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet. nan.	25	Y	FAC	7.			
2. Vac. uli.	15	Y	FAC	8.			
3. Rho. tom.	10		FACW	9.			
4. And. pol.	5		FACW	10.			
5. Vac. oxy.	1		OBL	11.			
6.				12.			

Total Sapling/Shrub Cover: 56

50% of total cover: 28 20% of total cover: 11.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	45	Y	FACW	12.			
2. Eri. ang.	7		OBL	13.			
3. Luz. wah.	5		OBL	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 57

50% of total cover: 28.5 20% of total cover: 11.4

Circular 1/10-ac plot ___ or other plot dimension: 10X10 % of bare ground: ____

% Cover of Wetland Bryophytes ____% Total Cover of Bryophytes ____%
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	13	X1=	13
FACW species	60	X2=	120
FAC species	40	X3=	120
FACU species	-	X4=	-
UPL + NL species	-	X5=	-
Column Totals:	113 (A)		253 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0

N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Lichen = 15%

SOIL

Sampling Point #: S 001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip (pos/neg)	Remarks (or use comment number)
0-3	Oi	-	-	-	-	-	-	-	NT	
3-20	Oe	-	-	-	-	-	L	-	↓	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- X Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox with 2.5Y Hue
- ___ AK Gleyed without Hue 5Y or Redder Underlying Layer
- ___ α,α-dipyridyl positive (see pg. 91)
- ___ Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: Frost.
Depth (inches): 20"

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- ___ Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ↓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- NT Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- Y Shallow Aquitard (D3) Frost (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) - hummocky
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes ___ No X Depth **of** water (in.) _____

Water Table Present? Yes X No ___ Depth **to** water (in.) 10

Seeping in at that depth but not yet filled?: ?

Saturation Present? (includes capillary fringe) Yes X No ___ Depth **to** sat. (in.) 4

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.02171

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

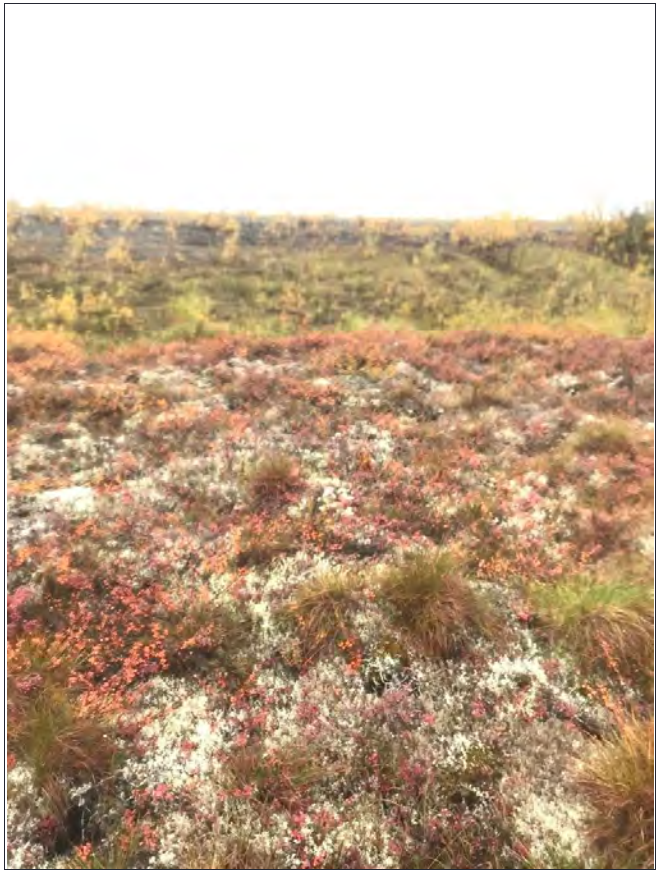


Photo Type: Vegetation Direction: S

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: MARSHALL Airport Borough/City: Kusilvak CA Date: 9/11/2022
Applicant/Owner: ADOT Sampling Point #: S10
Investigator(s): ZH / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.865627 Long. 162.034165 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Valley Bottom Slope (%): 3 Aspect: E
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSS1/EMIB
Photo nos./descriptions: NESW S0.12 Camera#: ___ Veg Type (Viereck Level 4 or other): DCZa
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes Y	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes Y	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet. nan.	25	Y	FAC	7. Emp. nig.	15	Y	FAC
2. Vac. vli.	15	Y	FAC	8. And. pol.	3		FACW
3. Pop. bal.	5		FACU	9. Sal. pul.	5		FACW
4. Rho. tom.	15	Y	FACW	10.			
5. Aln. sin.	1		FAC	11.			
6. Sal. arb.	5		FACW	12.			

Total Sapling/Shrub Cover: 89
50% of total cover: 44.5 20% of total cover: 17.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	55	Y	FACW	12.			
2. Eri. ang.	3		OBL	13.			
3.				14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 58
50% of total cover: 29 20% of total cover: 11.6
Circular 1/10-ac plot ___ or other plot dimension: 20X20 % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	X1=	3
FACW species	83	X2=	166
FAC species	56	X3=	168
FACU species	5	X4=	20
UPL + NL species	–	X5=	0
Column Totals:	147 (A)		357 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: S1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi	-	-	-	-	-	-			
2-4	B	2.5Y4/1	100	-	-	-	-	SALO	NT	
4-20	Oe	-	-	-	-	-	-			

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- Y Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: VPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- _ Sediment Deposits (B2)
- _ Drift Deposits (B3)
- _ Algal Mat or Crust (B4)
- _ Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- _ Inundation Visible on Aerial Imagery (B7)
- _ Sparsely Vegetated Concave Surface (B8)
- _ Marl Deposits (B15)
- _ Hydrogen Sulfide Odor (C1)
- _ Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- _ Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- NT Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12") large tussocks
- Y Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes _____ No X Depth **of** water (in.) _____

Water Table Present? Yes Y No _____ Depth **to** water (in.) 11

Seeping in at that depth but not yet filled?: 8

Saturation Present? (includes capillary fringe) Yes X No _____ Depth **to** sat. (in.) 6

Epi Endo Unknown

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.03417

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: MARSHALL AIRPORT Borough/City: Kusilvak CA Date: 9/11/2022

Applicant/Owner: ADOT Sampling Point #: 511

Investigator(s): ZH/BC Firm: HDR Alaska, Inc.

Lat. (dec.°) 61.865660 Long. 162.033672 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___

Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Valley Bottom Slope (%): 3 Aspect: E

Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: linear / (convex) / concave NWI classification: PSS1/EMIC

Photo nos./descriptions: NESW 2-soil Camera #: ___ Veg Type (Viereck Level 4 or other): DC2f

Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain: Wetter HGM type: Slope

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X	No ___		Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___

50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. arb.	20	Y	FACW	7. Aln. sin.	1		FAC
2. Sal. pul.	15		FACW	8.			
3. Vac. uli.	20	Y	FAC	9.			
4. Bet. nan.	10		FAC	10.			
5. And. gol.	7		FACW	11.			
6. Rha. lan.	5		FACW	12.			

Total Sapling/Shrub Cover: 79

50% of total cover: 39 20% of total cover: 15.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	15	Y	FACW	12.			
2. Car. aqu.	15	Y	OBL	13.			
3. Cal. can.	10	Y	FAC	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 40

50% of total cover: 20 20% of total cover: 8

Circular 1/10-ac plot ___ or other plot dimension: 15X15 % of bare ground: ___

% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes ___% (where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	X1=	15
FACW species	62	X2=	124
FAC species	41	X3=	123
FACU species	0	X4=	0
UPL + NL species	~	X5=	0
Column Totals:	118 (A)		262 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0

N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 571

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-3	O	~	~	~	~	~	~	~		
3-12	B	N 4/1	85	7.5YR 4/4	15	C	PL, RC	SaLo	+	
12-20	Oeb	—	~	~	~	~	~	—		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- Y Hydrogen Sulfide (A4) (within 12" of mineral surface; @ 8" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- Y Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: VPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- Y Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10)
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. o,o or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummocks
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ____ Depth **of** water (in.) 2" - low areas

Water Table Present? Yes X No ____ Depth **to** water (in.) 5

Seeping in at that depth but not yet filled?: ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 3

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot Number	HDR511	**Wetland Status**	Wetland	**Vegetation Type**	Shrub Birch Willow
Plot Type	WD: Wetland Determination	**NWI Classification**	PSS1/EM1C	**Latitude (DD)**	61.86566
Plot Date	9/11/2022	**HGM**	Slope	**Longitude (DD)**	-162.03367

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.03352

Photo Type: Hydrology Direction: N

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.03333

Photo Type: Soils Direction: W

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

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	**HGM**	N/A	**Longitude (DD)**	-162.03323

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

Photo Type: Direction:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.03321

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

PHOTO REPORT

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	**HGM**	N/A	**Longitude (DD)**	-162.0373

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.03741

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

Photo Type: Direction:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.03776

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.03805

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

Photo Type: Direction:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: MARSHALL AIRPORT Borough/City: Kusilvak CA Date: 9/11/22

Applicant/Owner: ADOT Sampling Point #: 520

Investigator(s): ZH/BC Firm: HDR Alaska, Inc.

Lat. (dec.°) 61.871589 Long. 162.038534 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___

Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Terrace/FP Slope (%): 0 Aspect: N/A

Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: U

Photo nos./descriptions: NESW - 2 soil Camera#: ___ Veg Type (Viereck Level 4 or other): B2a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: N/A

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X		Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None.				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___

50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. sco.	30	Y	FAC	7.			
2. Sal. beb.	15	Y	FAC	8.			
3. Sal. pul.	10		FACW	9.			
4. Vac. uli.	3		FAC	10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 58

50% of total cover: 29 20% of total cover: 11.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	70	Y	FAC	12.			
2. Rub. arc.	5		FAC	13.			
3. Com. pal.	3		OBL	14.			
4. Galium Trifi	1		FACW	15.			
5. Equ. arv.	15		FAC	16.			
6. Pot. acu.	5		FAC	17.			
7. Viola sp.	1		—	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 100

50% of total cover: 50 20% of total cover: 20

Circular 1/10-ac plot ___ or other plot dimension: 20x20 % of bare ground: 0

% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes ___% (where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	X1=	3
FACW species	11	X2=	22
FAC species	143	X3=	429
FACU species	—	X4=	0
UPL + NL species	—	X5=	0
Column Totals:	157 (A)		454 (B)

Prevalence Index = B/A = 2.89

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0

N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: S20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oe									
2-5	A	10YR 3/2	100	—	—	—	—	SILO		
5-7	B	2.5Y 4/2	50	7.5YR 3/2	50	C,M	M,PL	SILO	N	
7-18	B_2	10YR 4/2	95	7.5YR 3/3	5	C	PL	SILO	N	
18-20	B_3	2.5Y 4/1	80	7.5YR 3/3	20	C	M,PL	SILO	N	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1. No primary hydro for problematic. Negative 22 tests.
2.
3. Soil profile moist but not saturated.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) FP
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

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? (includes capillary fringe) Yes ____ No X Depth **to** sat. (in.) _____ Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indication of recent flooding. No primary hydro indicators observed but two Secondary observed.

PHOTO REPORT

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	**HGM**	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: MARSHALL AIRPORT Borough/City: Kusilvak CA Date: 9/11/2022

Applicant/Owner: ADOT Sampling Point #: SZ1

Investigator(s): ZH/BC Firm: HDR Alaska, Inc.

Lat. (dec.°) 61.871363 Long. 162.038276 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Valley Bottom Slope (%): 3 Aspect: W

Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EEM1B

Photo nos./descriptions: NESW - 2soil Camera #: ___ Veg Type (Viereck Level 4 or other): TIC2a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain: Wetter HGM type: Slope

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X	No ___		
Wetland Hydrology Present?	Yes X	No ___	Remarks (e.g., marginal?):	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic gla.	5	Y	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 5

50% of total cover: 2.5 20% of total cover: 1.0

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pic gla.	5		FACW	7. And. pol.	3		FACW
2. Bet. nan.	30	Y	FAC	8.			
3. Vac. uli.	25	Y	FAC	9.			
4. Sal. pul.	5		FACW	10.			
5. Rho tom	10		FACW	11.			
6. Emp. nig.	7		FAC	12.			

Total Sapling/Shrub Cover: 95

50% of total cover: 42.5 20% of total cover: 17

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	10	Y	FACW	12.			
2. Cal. can.	10	Y	FAC	13.			
3. Pet. fri.	5		FACW	14.			
4. Rub. cha.	5		FACW	15.			
5. Equ. arv.	5		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 35

50% of total cover: 17.5 20% of total cover: 7.0

Circular 1/10-ac plot ___ or other plot dimension: 10 X 10 % of bare ground: ___

% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	X1=	0
FACW species	38	X2=	76
FAC species	77	X3=	231
FACU species	10	X4=	40
UPL + NL species	—	X5=	0
Column Totals:	125 (A)		347 (B)

Prevalence Index = B/A = 2.78

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0

N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: S21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-3	Oi									
3-10	Oe									
10-20	A/B	7.5YR 3/2	100	—	—	—	—	SILO	NT	
20-21	B	5Y 4/2	100					SILO	NT	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- X Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- NT Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) – slope break
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummocky
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):
Surface Water Present? Yes _____ No X Depth **of** water (in.) _____
Water Table Present? Yes X No _____ Depth **to** water (in.) 18
Seeping in at that depth but not yet filled?: 11
Saturation Present? Yes _____ No _____ Depth **to** sat. (in.) 7
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Low area w/ ponded water located just outside of plot.

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot 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	9/11/2022	**HGM**	Slope	**Longitude (DD)**	-162.03828

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	9/11/2022	**HGM**	N/A	**Longitude (DD)**	-162.03851

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: SE

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 523
Investigator(s): ZH / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.071236 Long. 162.039173 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Terrace/PP Slope (%): 0 Aspect: N/A
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSS1/EMIC
Photo nos./descriptions: NESW 3-soil. Camera#: ___ Veg Type (Viereck Level 4 or other): IIBSa
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Riverine
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	40	Y	FACW	7.			
2. Sal. Sco.	10		FAC	8.			
3. Sal. beb.	10		FAC	9.			
4. Ribes lax	1		FACW	10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 61
50% of total cover: 30.5 20% of total cover: 12.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	20	Y	FAC	12.			
2. Com. pal.	15	Y	OBL	13.			
3. Rub. arc.	7		FAC	14.			
4. Equ. arv.	5		FAC	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 47
50% of total cover: 23.5 20% of total cover: 9.4

Circular 1/10-ac plot X or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	X1=	15
FACW species	40	X2=	80
FAC species	52	X3=	156
FACU species	1	X4=	4
UPL + NL species	–	X5=	0
Column Totals:	108 (A)		255 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 523

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oe									
2-7	A1B	5Y 3/1	90	7.5YR 4/4	10	C	PL,RC	SALO		
7-11	Oeb									
11-20	B	2.5Y 3/2	80	7.5YR 3/3	20	C	PL	VFSALO	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- X Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- Y Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- Y Drainage Patterns (B10)
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) - Floodplain
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummocky
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ____ Depth **of** water (in.) 1-6" in low areas

Water Table Present? Yes X No ____ Depth **to** water (in.) 1"

Seeping in at that depth but not yet filled?: –

Saturation Present? (includes capillary fringe) Yes Y No ____ Depth **to** sat. (in.) 0-surf.

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface H_2O present in several low spots throughout.
Some drift deposits on low area vegetation. Drainage patterns = surface water moves b/t low areas

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.03904

Photo Type: Hydrology Direction: NW

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: SE

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

Photo Type: Vegetation Direction: SW

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.03897

Photo Type: Soils Direction: NA

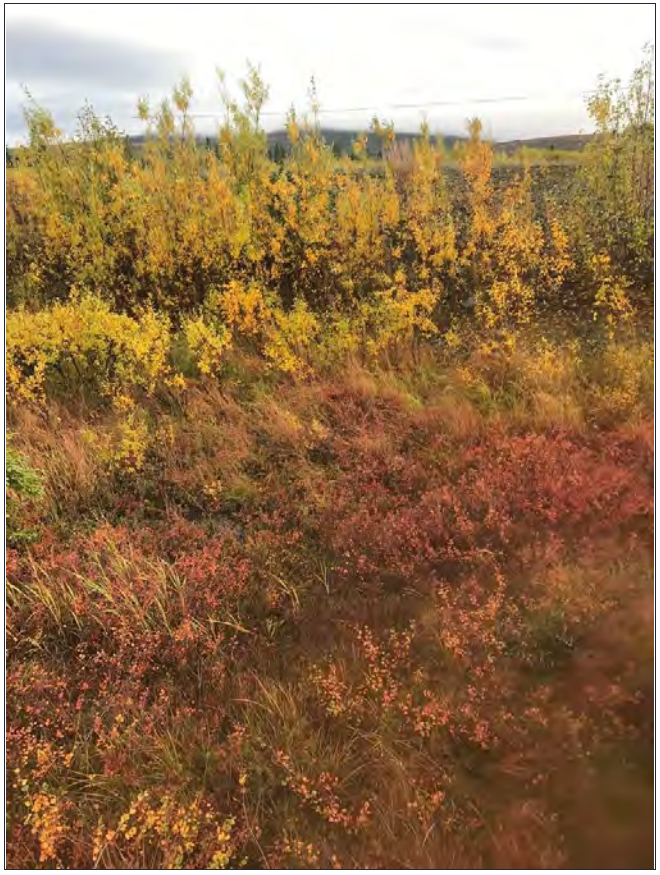


Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 527
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.871578 Long. 162.039974 ±___' NAD 83 Recorded on GPS?: X Marked on map? __ Field Map #: ____
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Terrace/Floodplain Slope (%): 2 Aspect: SW
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSS1/EM1C
Photo nos./descriptions: NESW 2-Soil 1-hydro Camera#: ____ Veg Type (Viereck Level 4 or other): IIB2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Riverine
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the sampled area within a wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ____	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ____
50% of total cover: ____ 20% of total cover: ____

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	60	Y	FACW	7.			
2.				8.			
3.				9.			
4.				10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 60
50% of total cover: 30 20% of total cover: 12

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Com. pal.	15		OBL	12.			
2. Rub. arc.	10		FAC	13.			
3. Cal. can.	50	Y	FAC	14.			
4. Equ. arv.	10		FAC	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 85
50% of total cover: 42.5 20% of total cover: 17

Circular 1/10-ac plot ___ or other plot dimension: 20x20 % of bare ground: ____
% Cover of Wetland Bryophytes ____% Total Cover of Bryophytes ____%
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	X1=	15
FACW species	60	X2=	120
FAC species	70	X3=	210
FACU species	—	X4=	—
UPL + NL species	—	X5=	—
Column Totals:	145 (A)		345 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point #: 527

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-4	Oe									
4-8	B_1	2.5Y 4/1	85	5YR 4/4	15	C	M,RC	SILO	-	
8-22	B_2	5Y 4/1	70	5YR 4/4	15	C	M,PL,RC	SILO	-	
				7.5YR 3/4	15	↓	↓			

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- Y/N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- Y Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- Y/N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummocky
- Y/N FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes ____ No X Depth **of** water (in.) _____

Water Table Present? Yes X No ____ Depth **to** water (in.) 17

Seeping in at that depth but not yet filled?: 15

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 11

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No surface water but algal mats observed in low spots and on downed vegetation,

PHOTO REPORT

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	**HGM**	Riverine	**Longitude (DD)**	-162.03997

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Riverine	**Longitude (DD)**	-162.04137

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	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: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 530
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.872845 Long. 162.042964 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Terrace/FP Slope (%): 2 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: U
Photo nos./descriptions: NESW - 250.1 Camera #: ___ Veg Type (Viereck Level 4 or other): IIB2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___	No X	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes ___	No X	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. beb.	15		FAC	7.			
2. Sal. pul.	40	Y	FACW	8.			
3. Ros. aci.	20	Y	FACU	9.			
4. Vib. edu.	10		FACU	10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 85
50% of total cover: 42.5 20% of total cover: 17

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Equ. arv.	30	Y	FAC	12.			
2. Car. can.	20	Y	FAC	13.			
3. Rub. arc.	5		FAC	14.			
4. Gal. trifid.	1		FACW	15.			
5. Pol. aca.	3		FAC	16.			
6. Cha. ang.	5		FACU	17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 64
50% of total cover: 32 20% of total cover: 12.8
Circular 1/10-ac plot ___ or other plot dimension: 15X15 % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	–	X1=	–
FACW species	41	X2=	82
FAC species	73	X3=	219
FACU species	35	X4=	140
UPL + NL species	–	X5=	–
Column Totals:	149 (A)		441 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: SP0

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-5	A	10YR 2/2	100					SILO		
5-11	B1	2.5Y 4/1	90	7.5YR 3/3	10	C	M,PL	SILO		
11-22	B2	2.5Y 4/1	80	7.5YR 3/3	20	C	M,PL	SILO		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- ___ Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox with 2.5Y Hue
- ___ AK Gleyed without Hue 5Y or Redder Underlying Layer
- ___ α,α-dipyridyl positive (see pg. 91)
- ___ Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3. No primary hydro indicator for problematic soil indicators.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3) (w/in 12")
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- ___ Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2) FP
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- N FAC Neutral Test (D5)

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? (includes capillary fringe) Yes ____ No X Depth **to** sat. (in.) _____ Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary hydro and only one secondary indicator observed.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.04296

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	Riverine Channel	**Longitude (DD)**	-162.04327

Photo Type: Hydrology Direction: NE

Photo Type: Hydrology Direction: NW

Photo Type: Hydrology Direction: SW

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 532
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.971720 Long. 162.039227 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Terrace/Flat/Plain Slope (%): 2 Aspect: W
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EM1B
Photo nos./descriptions: NE CW 2-soil Camera#: ___ Veg Type (Viereck Level 4 or other): IB2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Riverine
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	50	Y	FACW	7.			
2. Vac. uli.	5		FAC	8.			
3.				9.			
4.				10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 55
50% of total cover: 27.5 20% of total cover: 11

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	60	Y	FAC	12.			
2. Com. pal.	20	Y	OBL	13.			
3. Car. aqu.	3		OBL	14.			
4. Rub. ark.	7		FAC	15.			
5. Equ. arv.	10		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 100
50% of total cover: 5 20% of total cover: 20
Circular 1/10-ac plot ___ or other plot dimension: 15X15 % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	23	X1=	23
FACW species	50	X2=	100
FAC species	82	X3=	246
FACU species	—	X4=	—
UPL + NL species	—	X5=	—
Column Totals:	155 (A)		369 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 532

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-3	Oi									
3-10	B1	2.5Y 4/1	70	7.5YR 4/4	15	C	M,PL,RC	SiLO	+	
				7.5YR 3/3	15	C	M,PL,RC	↓		
10-22	B2	5Y 5/1	70	7.5YR 4/4	30	C	M,PL	SiLO	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- Y Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p. 91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes Y No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) FP
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) mod hum.
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes ____ No X Depth **of** water (in.) _____

Water Table Present? Yes X No ____ Depth **to** water (in.) 19

Seeping in at that depth but not yet filled?: 14

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 11

Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Riverine	**Longitude (DD)**	-162.03923

Photo Type: Hydrology Direction: E

Photo Type: Hydrology Direction: N

Photo Type: Soils Direction: NA

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Riverine	**Longitude (DD)**	-162.03974

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 535
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.872790 Long. 162.041695 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Terrace/FP Slope (%): 1 Aspect: N
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSS1/EM1B
Photo nos./descriptions: NESW 2-Soil Camera#: ___ Veg Type (Viereck Level 4 or other): IIB2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain: Wetter HGM type: Riverine
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh ≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	30	Y	FACW	7.			
2. Sal. las.	30	Y	FACW	8.			
3. Ros. aci.	20	Y	FAC	9.			
4. Rib. lax.	3		FACU	10.			
5. Sal. beb.	15		FAC	11.			
6.				12.			

Total Sapling/Shrub Cover: 88
50% of total cover: 44 20% of total cover: 17.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	40	Y	FAC	12.			
2. Com. pal.	10		OBL	13.			
3. Equi. arv.	15	Y	FAC	14.			
4. Pot. gra.	3		FAC	15.			
5. Rub. arc.	3		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 71
50% of total cover: 35.5 20% of total cover: 14.2
Circular 1/10-ac plot ___ or other plot dimension: 20X20 % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	X1=	10
FACW species	60	X2=	120
FAC species	66	X3=	198
FACU species	23	X4=	92
UPL + NL species	–	X5=	–
Column Totals:	159 (A)		420 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Large Pic. gla. located just outside of plot.

SOIL

Sampling Point #: 535

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-9	B7	10YR 4/2	80	7.5YR 3/4	10	C	M,PL,RC	SiCO	+	
				7.5YR 4/4	10	C	M,PL,RC	SiCO		
9-16	B2	2.5Y 4/1	80	5YR 4/4	10	C	M,PL,RC	SiCO	+	
				7.5YR 3/3	10	C	M,PL	↓		
16-20	B3	2.5Y 4/1	100	-	-	-	-	SiCO	NT	20% platy organics

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- Y Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- Y Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- Y α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3. Primary hydro + hydrophytic veg + appropriate landscape therefore problematic indicators apply.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) FP
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes ____ No X Depth **of** water (in.) ____

Water Table Present? Yes X No ____ Depth **to** water (in.) 17

Seeping in at that depth but not yet filled?: 13

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 10 Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Riverine	**Longitude (DD)**	-162.0417

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Riverine	**Longitude (DD)**	-162.04148

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	Riverine	**Longitude (DD)**	-162.04181

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.04218

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.04263

Photo Type: Hydrology Direction: N

Photo Type: Hydrology Direction: W

Photo Type: Vegetation Direction: E

PHOTO REPORT

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	**HGM**	Riverine	**Longitude (DD)**	-162.04344

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.04381

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: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: S42
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.873363 Long. 162.044117 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Terrace. Slope (%): 7 Aspect: SE
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification:
Photo nos./descriptions: NESW Soil X2 Camera #: Veg Type (Viereck Level 4 or other): IIB1a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain. Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No	**Is the sampled area within a wetland?**	**Yes** **No X**
Hydric Soil Present?	Yes	No X		Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes	No X		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover:
50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	20	Y	FACW	7.			
2. Sal. arb.	20	Y	FACW	8.			
3. Ros. aci.	30	Y	FACU	9.			
4. Sal. heb.	25	Y	FAC	10.			
5. Vib. edu.	3		FACU	11.			
6.				12.			

Total Sapling/Shrub Cover: 98
50% of total cover: 49 20% of total cover: 19.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	20	Y	FAC	12.			
2. Equ. arv.	10	Y	FAC	13.			
3.				14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 30
50% of total cover: 15 20% of total cover: 6
Circular 1/10-ac plot ___ or other plot dimension: 10X10 % of bare ground:
% Cover of Wetland Bryophytes (where applicable): % Total Cover of Bryophytes: %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species –	X1= –
FACW species 40	X2= 80
FAC species 55	X3= 165
FACU species 33	X4= 132
UPL + NL species –	X5= –
Column Totals: 128 (A)	377 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point #: 542

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-4	Oe									
4-9	A/B	10YR 4/2	50	-	-	-	-	SiCL	-	
		10YR 3/2	50	-	-	-	-	SiCL	-	
9-20	B	2.5Y 4/1	85	7.5YR 3/3	15	C,M	Pl,M	SiCL	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- ☑ Histosol or Histel (A1)
- ☐ Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- ☐ Thick Dark Surface (A12)
- ☐ Alaska Gleyed (A13)
- ☐ Alaska Redox (A14)
- ☐ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ☑ Depleted Below Dark Surface (A11)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (F22)
- ☑ Alaska Color Change[4] (TA4)
- ☐ Alaska Alpine Swales (TA5)
- ☐ Alaska Redox with 2.5Y Hue
- ☐ AK Gleyed without Hue 5Y or Redder Underlying Layer
- ☐ α,α-dipyridyl positive (see pg. 91)
- ☐ Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. Profile moist but not saturated.
2.
3. No 1° hydro for problematic indicators

HYDROLOGY

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")
- ☑ Water Marks (B1)
- ☑ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☑ Algal Mat or Crust (B4)
- ☑ Iron Deposits (B5)
- ☑ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Marl Deposits (B15)
- ☑ Hydrogen Sulfide Odor (C1)
- ☑ Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- ☑ Other (explain)

Secondary Indicators (at least 2 are required)

- ☑ Water-Stained Leaves (B9)
- ☑ Drainage Patterns (B10) _____
- ☑ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ☑ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ☑ Salt Deposits (C5)
- ☑ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- ☑ Microtopographic Relief (D4) (caused by water)
- ☑ FAC Neutral Test (D5)

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? (includes capillary fringe) Yes ____ No X Depth to sat. (in.) _____ Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sloped area above floodplain adjacent to road.

PHOTO REPORT

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	**HGM**	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: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 543
Investigator(s): ZH / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.873549 Long. 162.044668 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Valley Bottom Slope (%): 3 Aspect: SE
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EM1B
Photo nos./descriptions: NESW - 2 soil Camera#: Veg Type (Viereck Level 4 or other): TICS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain. wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No	**Is the sampled area within a wetland?** Yes X No
Hydric Soil Present?	Yes X	No	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover:
50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. pul.	25	Y	FACW	7.			
2. Bet. nan.	35	Y	FAC	8.			
3. Vac. uli.	15		FAC	9.			
4. Pic. gla.	5		FACU	10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 80
50% of total cover: 40 20% of total cover: 16

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	20	Y	FAC	12.			
2. Pet. fri.	3		FACW	13.			
3. Com. pal.	5		OBL	14.			
4. Equ. arv.	15	Y	FAC	15.			
5. Poa. acu.	3		FAC	16.			
6. Eri. vag.	3		FACW	17.			
7. Cor. ags.	5		OBL	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 54
50% of total cover: 27 20% of total cover: 10.8
Circular 1/10-ac plot ___ or other plot dimension: 15x15 % of bare ground:
% Cover of Wetland Bryophytes (where applicable) % Total Cover of Bryophytes %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	X1=	10
FACW species	31	X2=	62
FAC species	88	X3=	264
FACU species	5	X4=	20
UPL + NL species	–	X5=	–
Column Totals:	134 (A)		356 (B)

Prevalence Index = B/A = 2.66

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point #: 543

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/ neg)	Remarks (or use comment number)
0-8	Oe									
8-18	B	2.5Y 4/1	80	5YR 4/4	20	C	M,PL,RC	SiCo	NT	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3. Would also meet AK Redox 2.5Y Hue if problematic.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- NT Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12") hummocky.
- Y Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ____ Depth **of** water (in.) 2"- in few low spots.

Water Table Present? Yes X No ____ Depth **to** water (in.) 5

Seeping in at that depth but not yet filled?: 3

Saturation Present? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 0-surf. Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.04467

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	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: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 545
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.874949 Long. 162.046315 ±___' NAD 83 Recorded on GPS?: X Marked on map? N Field Map #: ___
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Toeslope Slope (%): 0 Aspect: N/A
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS3/1B
Photo nos./descriptions: NE5N1 - 2Soil Camera #: ___ Veg Type (Viereck Level 4 or other): IIC2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X	No ___		Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___		

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Rhu. tom.	25	Y	FACW	7. Pic. gla.	1		FACU
2. Vac. v. t.	15	Y	FAC	8.			
3. Vac. uli.	10		FAC	9.			
4. Betnan.	10		FAC	10.			
5. Sal. pul.	3		FACW	11.			
6. Emp. nig.	5		FAC	12.			

Total Sapling/Shrub Cover: 69
50% of total cover: 34.5 20% of total cover: 13.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car. big.	15	Y	FAC	12.			
2. Rub. cha.	5	Y	FACW	13.			
3. Eri. vag.	3		FACW	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 23
50% of total cover: 11.5 20% of total cover: 4.6
Circular 1/10-ac plot X or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	36	X2=	72
FAC species	55	X3=	165
FACU species	1	X4=	4
UPL + NL species	—	X5=	—
Column Totals:	92 (A)		241 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Lichen. 25%

SOIL

Sampling Point #: 545

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/ neg)	Remarks (or use comment number)
0-2	Oi									
2-6	Oe									
6-12	Bg	N 4/1	75	5YR 4/4	25	C	M,PL,RC	SICL	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- Y Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- a1 Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- a1 AK Gleyed without Hue 5Y or Redder Underlying Layer
- a1 α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3. Would meet F3 + a2 if problematic.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) toe slope
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hum-how
- Y FAC Neutral Test (D5)

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? (includes capillary fringe) Yes X No ____ Depth **to** sat. (in.) 6" Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.04631

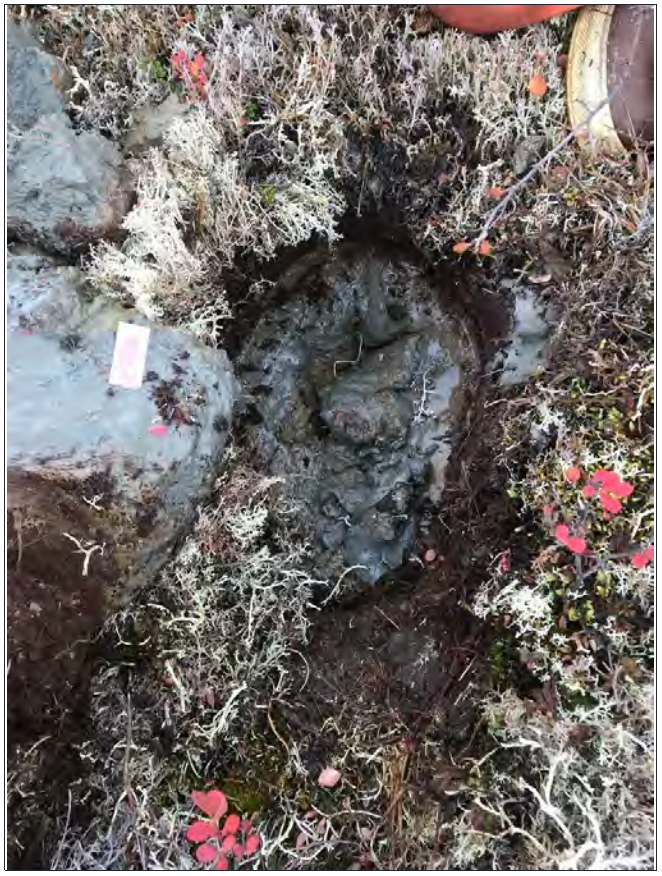


Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/12/2022
Applicant/Owner: ADOT Sampling Point #: 546
Investigator(s): ZH / BC Firm: 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 Landform: Terrace Slope (%): 10 Aspect: NE
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: U
Photo nos./descriptions: NESW 2-50.1 Camera#: ___ Veg Type (Viereck Level 4 or other): TBSd
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Weather HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___	No X	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes ___	No X	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic. mar.	15	___	FAC	5.	___	___	___
2. Sa. reb.	40	___	FAC	6.	___	___	___
3.	___	___	___	7.	___	___	___
4.	___	___	___	8.	___	___	___

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Spi. ste.	15	Y	FACW	7.	___	___	___
2. Vib. edu.	3	___	FACW	8.	___	___	___
3. Vac. uli.	7	___	FAC	9.	___	___	___
4. Sal. heb.	40	Y	FAC	10.	___	___	___
5. Aln. ten.	10	___	FAC	11.	___	___	___
6.	___	___	___	12.	___	___	___

Total Sapling/Shrub Cover: 75
50% of total cover: 37.5 20% of total cover: 15

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	20	Y	FAC	12.	___	___	___
2. Pol. acu.	7	___	FAC	13.	___	___	___
3. Equ. arv.	20	Y	FAC	14.	___	___	___
4. Ace. del.	5	___	FAC	15.	___	___	___
5. Rub. arc.	7	___	FAC	16.	___	___	___
6. Cal. tri.	1	___	FACW	17.	___	___	___
7.	___	___	___	18.	___	___	___
8.	___	___	___	19.	___	___	___
9.	___	___	___	20.	___	___	___
10.	___	___	___	21.	___	___	___
11.	___	___	___	22.	___	___	___

Total Herb Cover: 60
50% of total cover: 30 20% of total cover: 12
Circular 1/10-ac plot ___ or other plot dimension: 10x2.0 % of bare ground: ___
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 1	X2= 2
FAC species 116	X3= 348
FACU species 18	X4= 72
UPL + NL species —	X5= —
Column Totals: 135 (A)	422 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
N Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 546

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-3	Oi									
3-14	A	10YR3/1	100	-	-	-	-	SiCl	-	
14-21	B	2.5Y 4/1	85	5YR 3/4	15	C	M,PL,RC	SiCl	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- ✓ Histosol or Histel (A1)
- ___ Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ✓ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ✓ Alaska Color Change[4] (TA4)
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox with 2.5Y Hue
- ___ AK Gleyed without Hue 5Y or Redder Underlying Layer
- ___ α,α-dipyridyl positive (see pg. 91)
- ___ Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: MWD
Soil Map Unit Name:

Hydric Soil Present? Yes ___ No X

Comments:
1.
2.
3. No primary hydro indicators for problematic soil indicators.

HYDROLOGY

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")
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ✓ Iron Deposits (B5)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ✓ Marl Deposits (B15)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- ✓ Other (explain)

Secondary Indicators (at least 2 are required)

- ✓ Water-Stained Leaves (B9)
- ✓ Drainage Patterns (B10) _____
- ✓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ✓ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ✓ Salt Deposits (C5)
- ✓ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ✓ Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- ✓ Microtopographic Relief (D4) (caused by water)
- ✓ FAC Neutral Test (D5)

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? (includes capillary fringe) Yes X No ___ Depth **to** sat. (in.) 18
Epi Endo Unknown

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Adjacent to slough but ≈ 5' higher in elevation.
No primary or secondary hydro indicators, Saturation not w/in upper 12".

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.04583

Photo Type: Soils Direction: NA

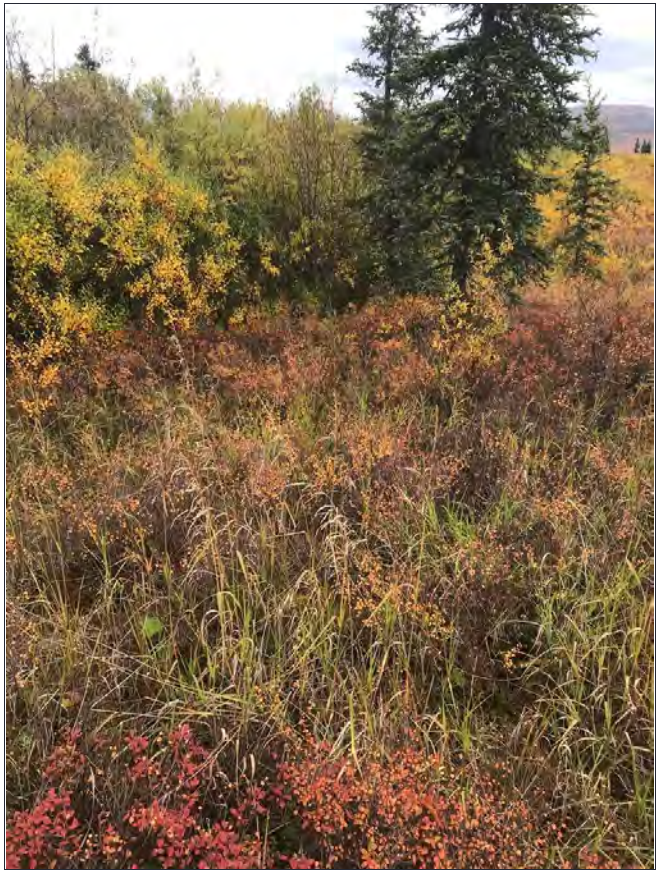


Photo Type: Vegetation Direction: E

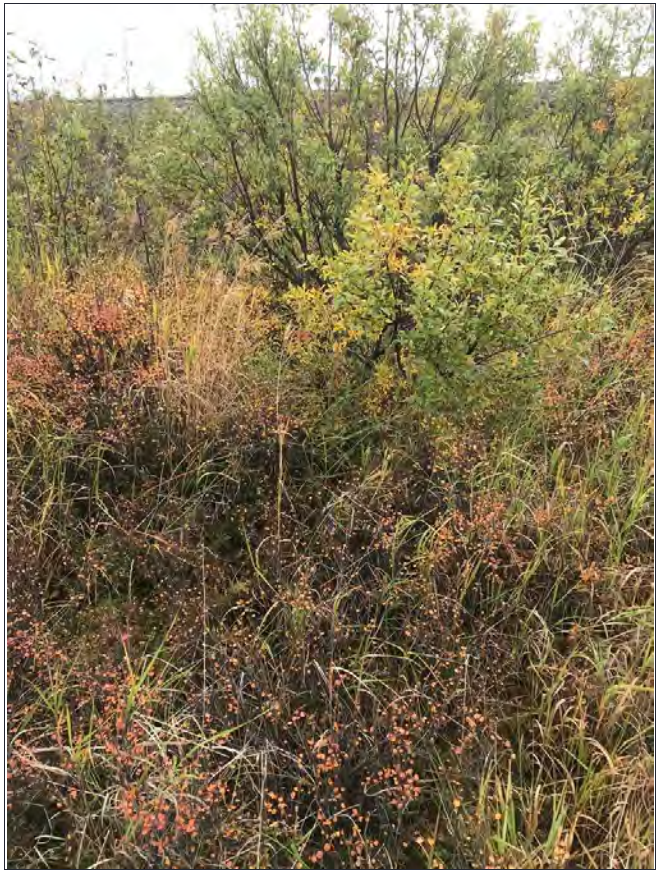


Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.04593

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot Number	HDR584	**Wetland Status**	Upland	**Vegetation Type**	Closed Tall Alder Shrub
Plot Type	FVP: Field Verification Point	**NWI Classification**	U	**Latitude (DD)**	61.87636
Plot Date	9/14/2022	**HGM**	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

Project: MARSHALL AIRPORT Borough/City: Kusilvak CA Date: 9/14

Applicant/Owner: ADOT Sampling Point #: 585

Investigator(s): ZH/BC Firm: HDR Alaska, Inc.

Lat. (dec.°) 61.876082 Long. 162.055919 ± ' NAD 83 Recorded on GPS?: X Marked on map? ___ Field Map #: ___

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Alluvial Slope (%): 10 Aspect: SE

Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/3B

Photo nos./descriptions: NESW 2-Soil Camera#: ___ Veg Type (Viereck Level 4 or other): TLD2

Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___

50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Rho. tom.	35	Y	FACW	7.			
2. Vac. uli.	20	Y	FAC	8.			
3. Emp. nig.	20	Y	FAC	9.			
4. Bet. nan?	10		FAC	10.			
5. Sal. arc.	7		FACW	11.			
6.				12.			

Total Sapling/Shrub Cover: 92

50% of total cover: 46 20% of total cover: 18.4

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car. big.	15	Y	FAC	12.			
2. Car. aqu.	15	Y	OBL	13.			
3.				14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 30

50% of total cover: 15 20% of total cover: 6

Circular 1/10-ac plot ___ or other plot dimension: 20x20 % of bare ground: ___

% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes ___%

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	X1=	15
FACW species	35	X2=	70
FAC species	65	X3=	195
FACU species	7	X4=	28
UPL + NL species	—	X5=	—
Column Totals:	122 (A)		308 (B)

Prevalence Index = B/A = 2.52

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0

N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

Lichen 10%

SOIL

Sampling Point #: 385

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-3	Oe									
3-8	B_1	5Y 4/1	100	-	-	-	-	SICL	+	
8-16	B_2	5Y 4/1	85	7.5YR 4/6	15	C	PL, RC	SICL	+	
16-20	B_3	10YR 4/3	95	2.5Y 5/1	5	D	PL	SICL	NT	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- X Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p. 91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

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? Yes ____ No X Depth **to** sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Profile very moist but not saturated. Three secondary indicators observed.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Soils Direction: NA

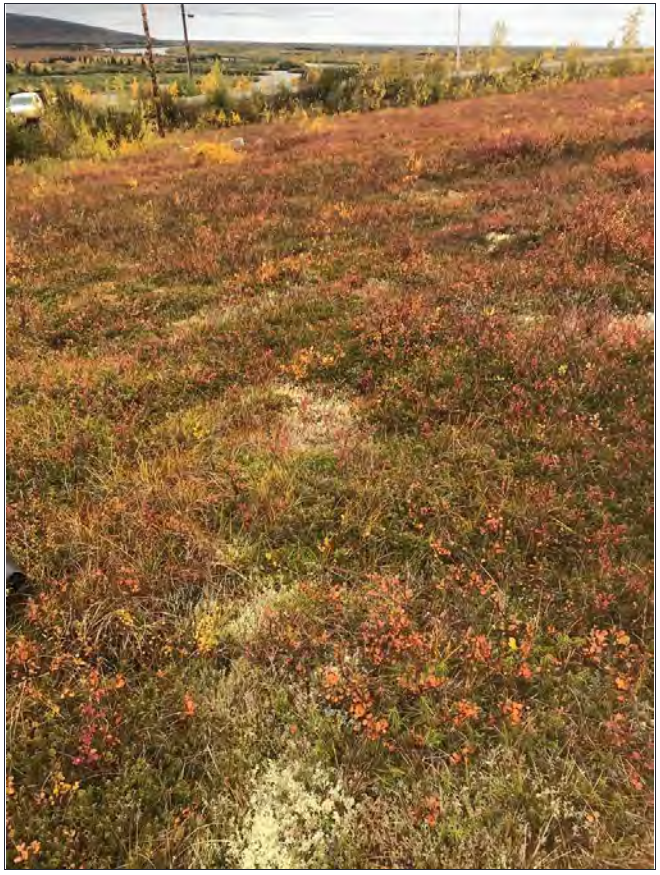


Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/18
Applicant/Owner: ADOT Sampling Point #: 586
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.876771 Long. 162.075255 ±___' 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: PSS3/EM1B
Photo nos./descriptions: MESW - 2 soil, Camera #: ___ Veg Type (Viereck Level 4 or other): II.C2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Rho. tom.	15	Y	FACW	7. Aln. sin.	1		FAC
2. Vac. uli.	15	Y	FAC	8. Sal. pul.	3		FACW
3. Vac. vit.	7		FAC	9.			
4. Emp. nig.	20	Y	FAC	10.			
5. Bet. nan.	7		FAC	11.			
6. Sal. fus.	5		FACW	12.			

Total Sapling/Shrub Cover: 43
50% of total cover: 36.5 20% of total cover: 14.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	40	Y	FACW	12.			
2. Car. aqu.	10		OBL	13.			
3. Ped. sp.	3		-	14.			
4. Car. big.	7		FAC	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 60
50% of total cover: 30 20% of total cover: 12
Circular 1/10-ac plot ___ or other plot dimension: 20x20 % of bare ground: 0
% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes 25 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	X1=	10
FACW species	63	X2=	126
FAC species	57	X3=	171
FACU species	-	X4=	0
UPL + NL species	-	X5=	0
Column Totals:	130 (A)		307 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%
Y Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 586

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-5	Oi									
5-10	Oe									
10-11	A	10YR 3/2	100					SiLO	NT	
11-15	B1	5Y 4/1	80	7.5YR 4/6	20	C	M,PL,RC	SiLO	+	
15-20	B2	5Y 4/1	100	-	-	-	-	SiLO	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- X Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- X Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):
Surface Water Present? Yes ____ No X Depth **of** water (in.) _____
Water Table Present? Yes X No ____ Depth **to** water (in.) 9
Seeping in at that depth but not yet filled?: ____
Saturation Present? Yes X No ____ Depth **to** sat. (in.) 6
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Two primary and three secondary indicators observed.

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot 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	**HGM**	Slope	**Longitude (DD)**	-162.07525

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.07505

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	N/A	**Longitude (DD)**	-162.07486

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.07465

Photo Type: Soils Direction: NA

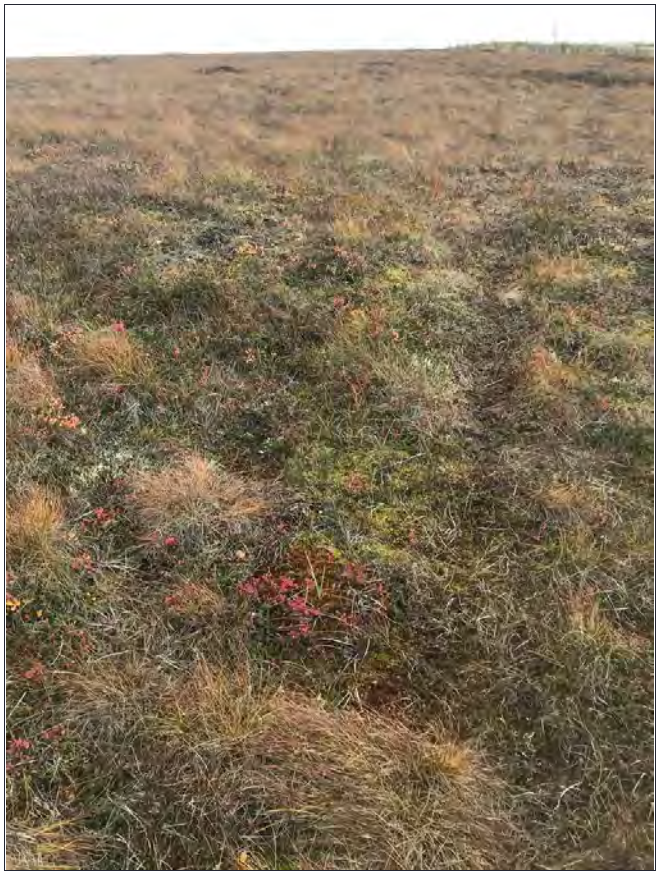


Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/10/2022
Applicant/Owner: ADOT Sampling Point #: 590
Investigator(s): ZH, BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.876323 Long. 162.074360 ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Low mount. Slope (%): 5 Aspect: NW
Local relief: Shape across slope: linear / (convex) / concave Shape up/downslope: linear / (convex) / concave NWI classification: PSS1/3B
Photo nos./descriptions: NESW - 2 soil. Camera #: Veg Type (Viereck Level 4 or other): OAC S-IK21
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh ≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None.				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Aln. sin.	25	Y	FAC	7. Bet. nan.	7		FAC
2. Rho. tom.	15	Y	FACW	8.			
3. Vac. uli.	15	Y	FAC	9.			
4. Sal. myr.	10		FACW	10.			
5. Vac. v.-i.	7		FAC	11.			
6. Emp. nig.	15	Y	FAC	12.			

Total Sapling/Shrub Cover: 94
50% of total cover: 47 20% of total cover: 18.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri. vag.	15	Y	FACW	12.			
2. Car. aq. u.	10	Y	OBL	13.			
3. Rub. Cha.	5		FACW	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 30
50% of total cover: 15 20% of total cover: 6.0
Circular 1/10-ac plot ___ or other plot dimension: 15x15 % of bare ground: 0
% Cover of Wetland Bryophytes ___ % Total Cover of Bryophytes 20 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	X1=	10
FACW species	45	X2=	90
FAC species	69	X3=	207
FACU species	–	X4=	0
UPL + NL species	–	X5=	0
Column Totals:	124 (A)		307 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 590

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-5	Oi									
5-17	Oe									
17-21	B	5Y 4/1	85	7.5YR 4/4	15	C	M,PL/RC	SiLo	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- X Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- X Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- Y Microtopographic Relief (D4) (caused by water) hummock
- Y FAC Neutral Test (D5)

Field Observations (in. from ground surface):

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 depth but not yet filled?: 12

Saturation Present? Yes X No ____ Depth **to** sat. (in.) 9
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Plot located on low mound but still meets wetland criteria.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	Slope	**Longitude (DD)**	-162.07436

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

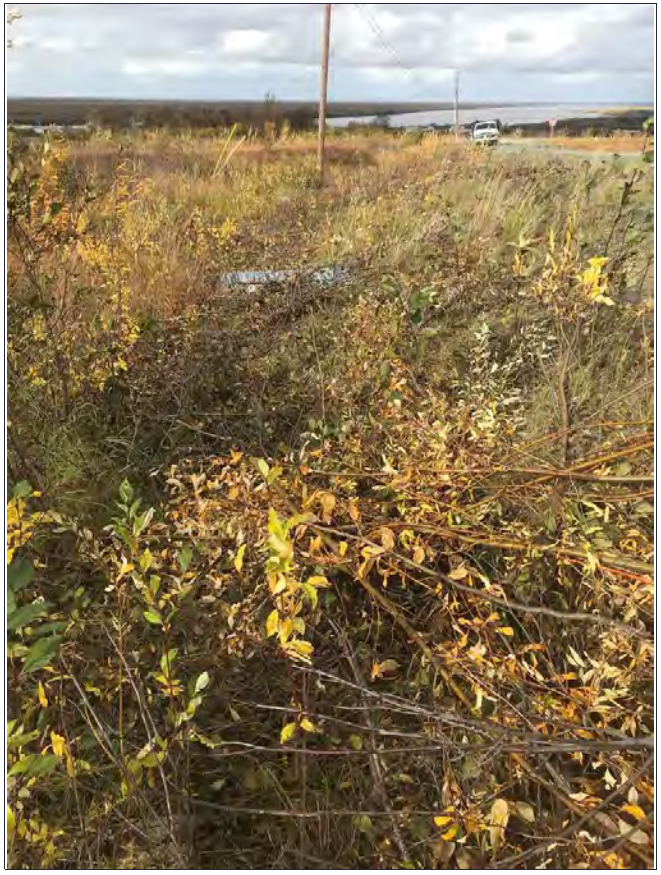


Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

Photo Type: Vegetation Direction: SW

PHOTO REPORT

Marshall Airport and Access Road Improvements

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

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.06567

Photo Type: Vegetation Direction: E

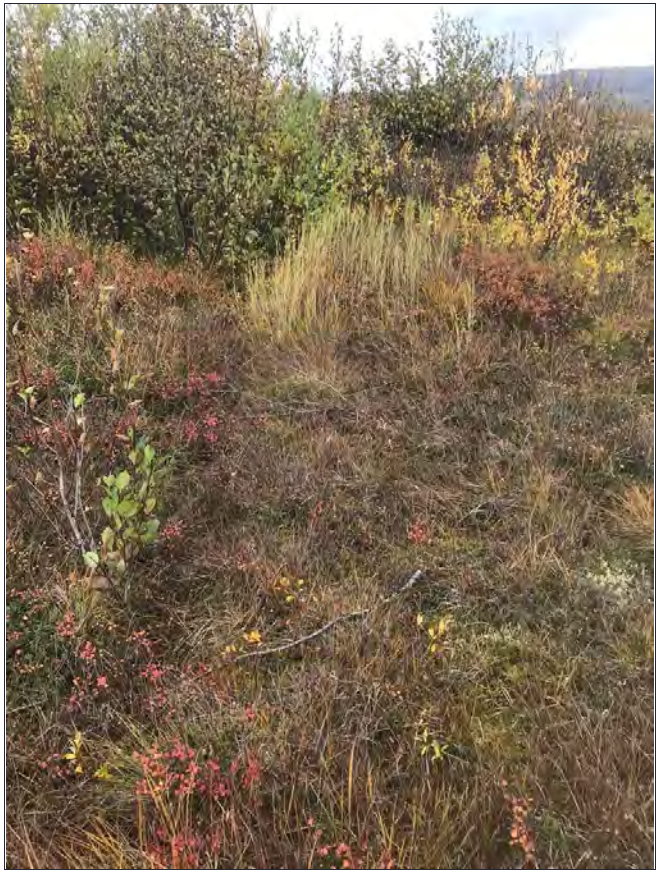


Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.06554

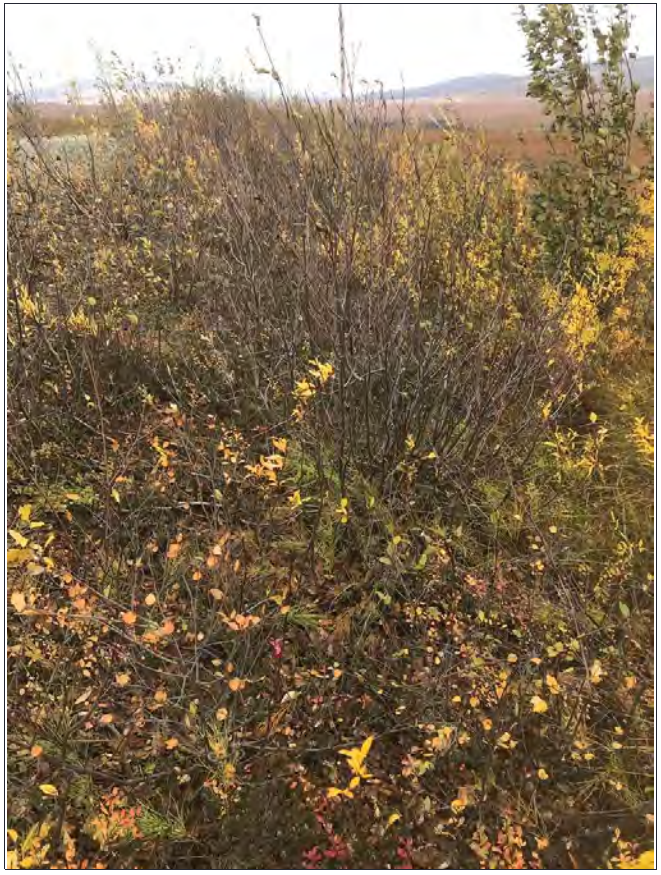


Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/19/2022
Applicant/Owner: ADOT Sampling Point #: 595
Investigator(s): Z# / BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.975891 Long. 162.049143 ± ' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: hillside Slope (%): 15 Aspect: E
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: U
Photo nos./descriptions: NESW @ 2-Soil. Camera#: Veg Type (Viereck Level 4 or other): OMF-ICZa
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X If no, explain: Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes	No X	**Is the sampled area within a wetland?** Yes No X
Hydric Soil Present?	Yes	No X	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes	No X	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pop. tre.	15	Y	FACU	5.			
2. Pic. gla.	15	Y	FACU	6.			
3. Bet. pap.	10	Y	FACU	7.			
4.				8.			

Total Tree Cover: 40
50% of total cover: 20 20% of total cover: 8.0

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Aln. sin.	5		FAC	7. Pic. gla.	7	Y	FACU
2. Vac. uli.	15	Y	FAC	8. Rho. tom.	3		FACW
3. Vac. vit.	5		FAC	9.			
4. Emp. nig.	7	Y	FAC	10.			
5. Bet. gld.	15	Y	FAC	11.			
6. Bet. pap.	5		FACU	12.			

Total Sapling/Shrub Cover: 62
50% of total cover: 31 20% of total cover: 12.4

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Spi. ann.	5	Y	FACU	12.			
2. Cal. can.	3	Y	FAC	13.			
3. Cha. ang.	3	Y	FACU	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 11
50% of total cover: 5.5 20% of total cover: 2.2
Circular 1/10-ac plot ___ or other plot dimension: 20x20 % of bare ground: 20-litter
% Cover of Wetland Bryophytes ___ % Total Cover of Bryophytes 10 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 10 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	X1=	0
FACW species	3	X2=	6
FAC species	50	X3=	150
FACU species	60	X4=	240
UPL + NL species	0	X5=	0
Column Totals:	113 (A)		396 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

N Dominance Test is >50%
N Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point #: 595

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-2	Oi									
2-6	A	10YR 2/2						SILT	-	
6-16		10YR 3/4	90	-				SILT	-	
		10YR 4/2	20					SILT	-	
16-20		10YR 4/4						SALT	-	30% gravel

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1.
2.
3.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. o,o or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- N FAC Neutral Test (D5)

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? (includes capillary fringe) Yes ____ No X Depth **to** sat. (in.) _____ Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot Number	HDR595	**Wetland Status**	Upland	**Vegetation Type**	Open Mixed Forest
Plot Type	WD: Wetland Determination	**NWI Classification**	U	**Latitude (DD)**	61.87588
Plot Date	9/18/2022	**HGM**	N/A	**Longitude (DD)**	-162.04914

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: Kusilvak CA Date: 9/18/2022
Applicant/Owner: ADOT Sampling Point #: 596
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.875584 Long. 162.050274 ±___' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #: ___
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Hillside Slope (%): 5 Aspect: SE
Local relief: Shape across slope: linear / convex / (concave) Shape up/downslope: (linear) / convex / concave NWI classification: PSSIB
Photo nos./descriptions: NESW - 230, 1 Camera #: ___ Veg Type (Viereck Level 4 or other): OWTS-IIB2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain: Wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the sampled area within a wetland?** Yes X No ___
Hydric Soil Present?	Yes X	No ___	Remarks (e.g., marginal?):
Wetland Hydrology Present?	Yes X	No ___	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. None				5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: ___
50% of total cover: ___ 20% of total cover: ___

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. ala.	20	Y	FAC	7. Rho. dom.	3		FACW
2. Sal arb.	15	Y	FACW	8. Spi. ste.	1		FACU
3. Sal. pul.	10	Y	FACW	9. Bet. pap.	5		FACU
4. Pic. gla.	5		FACU	10. Pop. bal.	3		FACU
5. Vac. uli.	10	Y	FAC	11.			
6. Aln. sin.	3		FAC	12.			

Total Sapling/Shrub Cover: 75
50% of total cover: 37.5 20% of total cover: 15

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal. can.	15	Y	FAC	12.			
2. Equ. arv.	10	Y	FAC	13.			
3.				14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 25
50% of total cover: 12.5 20% of total cover: 5
Circular 1/10-ac plot ___ or other plot dimension: 15x15 % of bare ground: 20-litter
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes 0 %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	X1=	0
FACW species	28	X2=	56
FAC species	58	X3=	174
FACU species	14	X4=	56
UPL + NL species	0	X5=	0
Column Totals:	100 (A)		286 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
X Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 596

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-1	O									
1-5	B1	2.5Y 4/1	15	7.5YR 3/4	5	C	M,PL	Loam		10% gravel
		2.5Y 4/3	80							
5-15	B2	5Y 4/1	75	7.5YR 4/4	25	C	M,PL,RC	SILT	+	
15-20	Oeb	-	-	-	-	-	-	-	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12" of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- X Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: SPD
Soil Map Unit Name:

Hydric Soil Present? Yes X No _____

Comments:
1.
2.
3. Loam horizon could be fill from adjacent road/material site.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2) (w/in 12")
- Y Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- Y Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Y Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2) - Concave
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- Y FAC Neutral Test (D5)

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.) 11
Seeping in at that depth but not yet filled?: 10
Saturation Present? Yes X No _____ Depth **to** sat. (in.) 7"
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTO REPORT

Marshall Airport and Access Road Improvements

Plot Number	HDR596	**Wetland Status**	Wetland	**Vegetation Type**	Open Tall Willow Shrub
Plot Type	WD: Wetland Determination	**NWI Classification**	PSS1B	**Latitude (DD)**	61.87598
Plot Date	9/18/2022	**HGM**	Slope	**Longitude (DD)**	-162.05027

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.05029

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Marshall Airport Borough/City: Kusilvak CA Date: 9/18/2022
Applicant/Owner: ADOT Sampling Point #: 598
Investigator(s): ZH/BC Firm: HDR Alaska, Inc.
Lat. (dec.°) 61.875691 Long. 162.050708 ±___' NAD 83 Recorded on GPS?: X Marked on map? X Field Map #: ___
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landform: Hillside Slope (%): 12 Aspect: SE
Local relief: Shape across slope: (linear) convex / concave Shape up/downslope: linear / (convex) / concave NWI classification: U
Photo nos./descriptions: NESW - 2-soil Camera #: ___ Veg Type (Viereck Level 4 or other): OMF-ICla
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain: Wetter HGM type: N/A
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? In Dry Season? Yes ___ No X If needed, explain answers here.

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the sampled area within a wetland?**	**Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X	Remarks (e.g., marginal?):	

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic. gla.	20	Y	FACU	5.			
2. Bet. pap.	20	Y	FACU	6.			
3.				7.			
4.				8.			

Total Tree Cover: 40
50% of total cover: 20 20% of total cover: 8.0

Sapling/Shrub Stratum (woody plants < 3" dbh)

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal. sco.	15	Y	FAC	7.			
2. Pic. gla.	3		FACU	8.			
3. Bet. pap.	10	Y	FACU	9.			
4. Cor. can.	1			10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 28
50% of total cover: 14.5 20% of total cover: 5.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Dry. exp.	3		FACU	12.			
2. Cal. can.	10	Y	FAC	13.			
3. Equ. arv.	10	Y	FAC	14.			
4. Cha. ang.	1		FACU	15.			
5. Cor. can.	1		FACU	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 25
50% of total cover: 12.5 20% of total cover: 5.0

Circular 1/10-ac plot ___ or other plot dimension: 20X20 % of bare ground: 30 litter
% Cover of Wetland Bryophytes ___% (where applicable) Total Cover of Bryophytes 0 %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	X1=	0
FACW species	0	X2=	0
FAC species	35	X3=	105
FACU species	58	X4=	232
UPL + NL species	0	X5=	0
Column Totals:	93 (A)		290 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

N Dominance Test is >50%
N Prevalence Index is ≤3.0
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point #: 598

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-1	Oe									
1-7		10YR 5/4	35	-	-	-	-	GRLO	-	
		10YR 4/6	65	-	-	-	-	GRLO	-	
7-20		7.5YR 3/2	78	7.5YR 3/4	7	C	M	SRLO	-	
		10YR 4/1	15					↓	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]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:

- N Histosol or Histel (A1)
- N Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- N Black Histic (A3)
- N Hydrogen Sulfide (A4) (within 12"of mineral surface; @ _____" in this pit
- N Thick Dark Surface (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depressions (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)

- N Alaska Color Change[4] (TA4)
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N AK Gleyed without Hue 5Y or Redder Underlying Layer
- N α,α-dipyridyl positive (see pg. 91)
- N Other (Low organic matter, low iron, high pH, recently developed., see p.91 of Supplement; explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present)
Type: None
Depth (inches): N/A

Drainage Class: MWD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3. No primary hydro for problematic indicators & No hydrophytic vegetation indicators.

HYDROLOGY

Wetland Hydrology Indicators (check ones that apply, **measure from soil surface**):

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2) (w/in 12")
- N Saturation (A3) (w/in 12")
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1)
- N Dry-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)
- N Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- N Drainage Patterns (B10) _____
- N Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- N Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", can perch H_2O w/in 12")
- N Microtopographic Relief (D4) (caused by water)
- N FAC Neutral Test (D5)

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? Yes ____ No X Depth **to** sat. (in.) ____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary indicators observed.

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	N/A	**Longitude (DD)**	-162.05071

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

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	**HGM**	Slope	**Longitude (DD)**	-162.05099

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Marshall Airport and Access Road Improvements

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	**HGM**	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

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

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 in-water 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.

Section 404 Involvement: 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

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 D Nelson

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

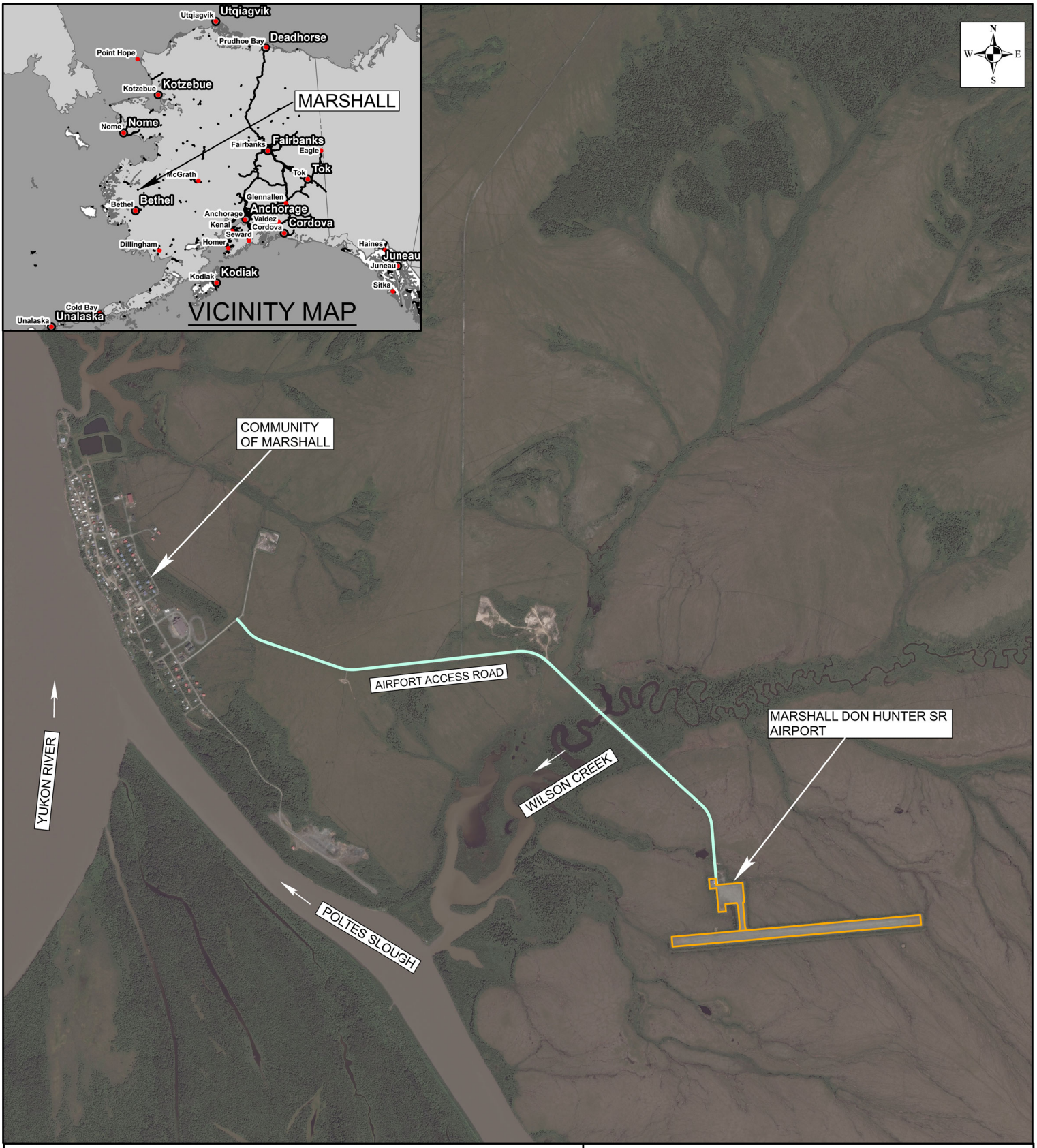
Supplemental Information

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.



0 0.25 0.5 1 Miles

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

LOCATION AND VICINITY MAPS

DATE: NOVEMBER 2022 | Figure 1 of 9

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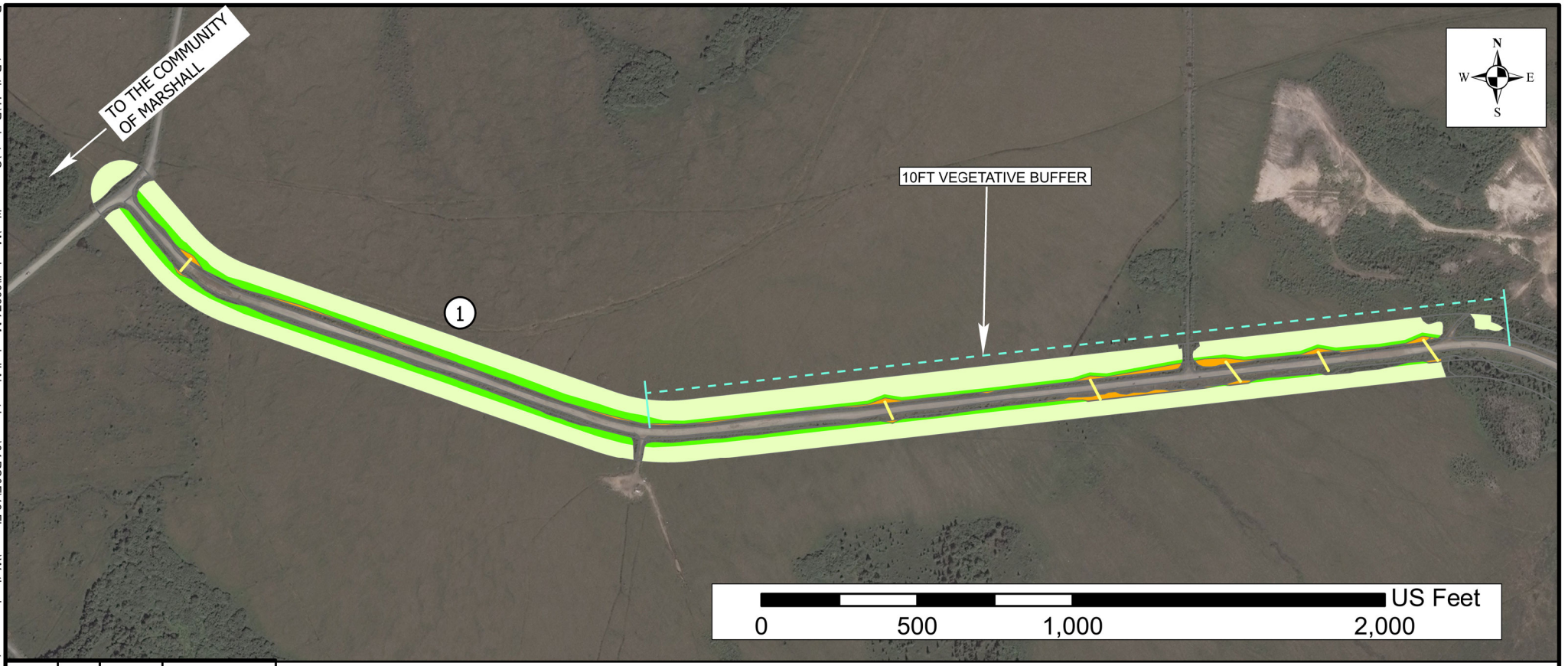

LEGEND

- TEMPORARY WETLAND IMPACTS FOR VEGETATIVE BUFFER* (10.0 ACRES TOTAL)
- PERMANENT WETLAND IMPACTS (9.7 ACRES TOTAL)
- MAPPED WETLAND/WATERBODY/TRIBUTARY
- CULVERT
- 10FT VEGETATIVE BUFFER LOCATIONS

*VEGETATIVE BUFFER IS 25FT OR TO ROW WHICHEVER IS CLOSER, UNLESS INDICATED AS 10FT ON FIGURE.

SCOPE

1. Rehabilitate Airport Access Road and replace culverts
2. Resurface Runway, Taxiway, Apron, SREB Pad, Segmented Circle Pad
3. Reconstruct Embankments
4. Replace FAA Runway Identifier Lights (REILs)
5. Rehabilitate SREB

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

WETLAND FILL FOR AIRPORT ACCESS ROAD (1 OF 2)

DATE: DECEMBER 2022

Figure 2 of 9

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LEGEND

- TEMPORARY WETLAND IMPACTS FOR VEGETATIVE BUFFER* (10.0 ACRES TOTAL)
- PERMANENT WETLAND IMPACTS (9.7 ACRES TOTAL)
- MAPPED WETLAND/WATERBODY/TRIBUTARY
- CULVERT
- 10FT VEGETATIVE BUFFER LOCATIONS

*VEGETATIVE BUFFER IS 25FT OR TO ROW WHICHEVER IS CLOSER, UNLESS INDICATED AS 10FT ON FIGURE.

SCOPE

1. Rehabilitate Airport Access Road and replace culverts
2. Resurface Runway, Taxiway, Apron, SREB Pad, Segmented Circle Pad
3. Reconstruct Embankments
4. Replace FAA Runway Identifier Lights (REILs)
5. Rehabilitate SREB

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

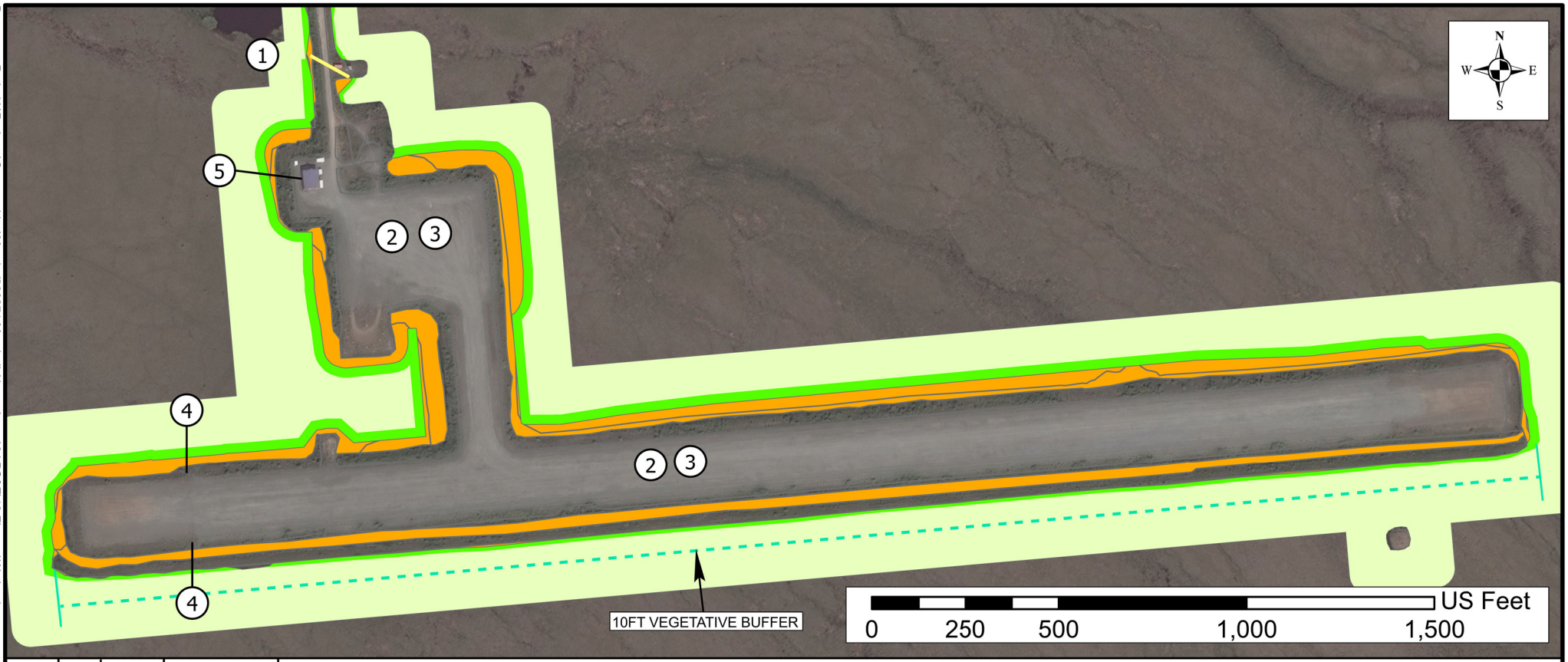
Applicant/Agent: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, AK 99709

MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

WETLAND FILL FOR AIRPORT ACCESS ROAD (2 OF 2)

DATE: DECEMBER 2022	Figure 3 of 9

Document Path: H:\Projects\Communities\Marshall\00371 Marshall Airport Imprv\04 PS&E\13 Figures\Wetlands vs new toe.aprx



LEGEND

- TEMPORARY WETLAND IMPACTS FOR VEGETATIVE BUFFER* (10.0 ACRES TOTAL)
- PERMANENT WETLAND IMPACTS (9.7 ACRES TOTAL)
- MAPPED WETLAND/WATERBODY/TRIBUTARY
- CULVERT
- 10FT VEGETATIVE BUFFER LOCATIONS

*VEGETATIVE BUFFER IS 25FT OR TO ROW WHICHEVER IS CLOSER, UNLESS INDICATED AS 10FT ON FIGURE.

SCOPE

1. Rehabilitate Airport Access Road and replace culverts
2. Resurface Runway, Taxiway, Apron, SREB Pad, Segmented Circle Pad
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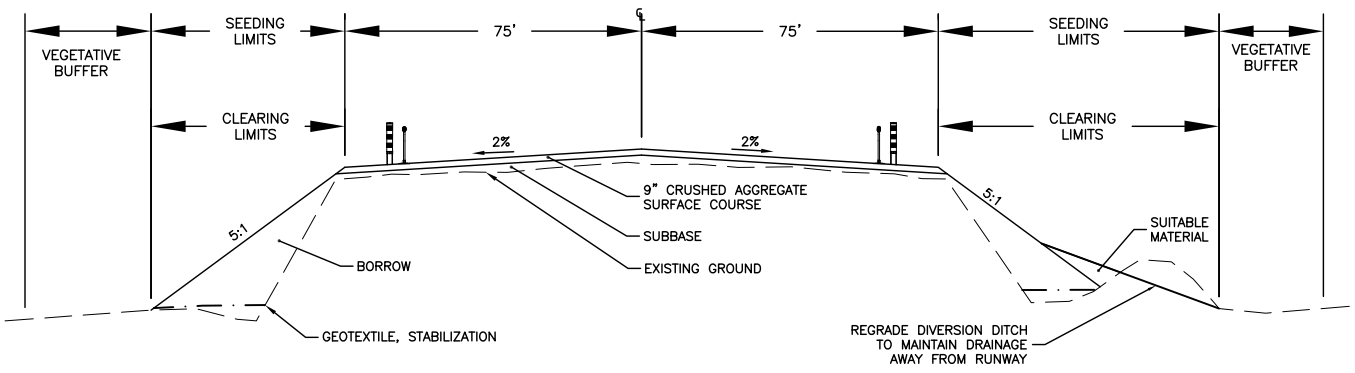
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Applicant/Agent: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, AK 99709

MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

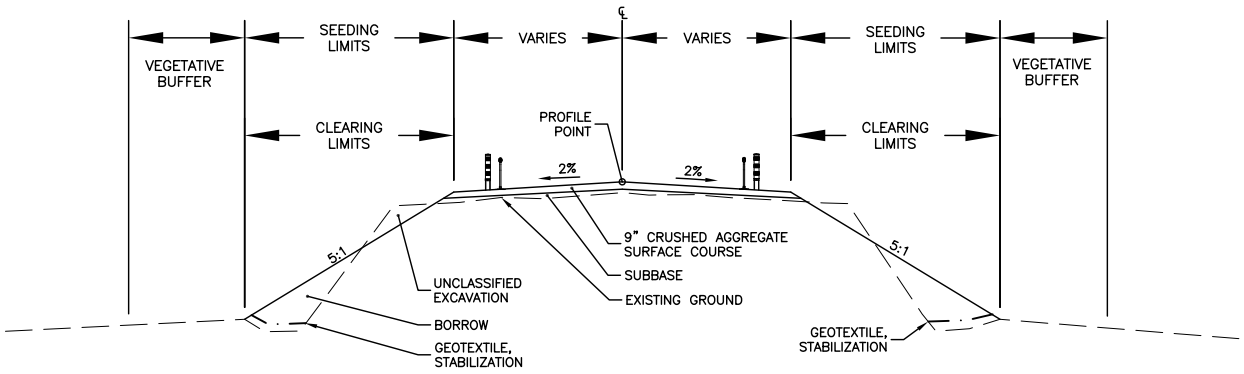
WETLAND FILL FOR AIRPORT SAFETY IMPROVEMENTS

DATE: DECEMBER 2022

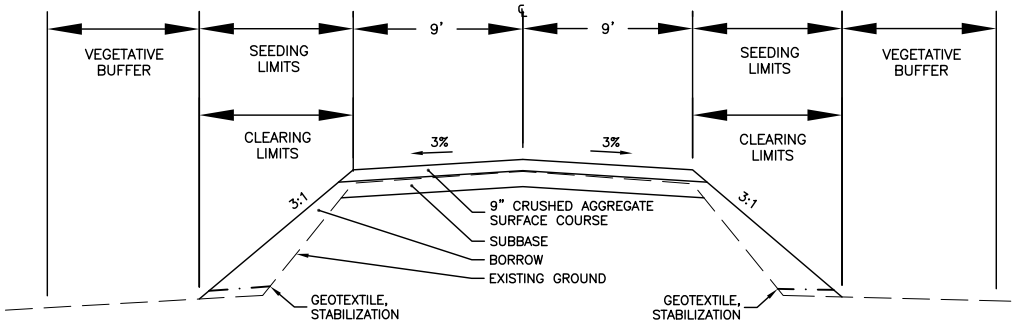
Figure 4 of 9



RUNWAY TYPICAL SECTION
NTS



TAXIWAY TYPICAL SECTION
NTS



ACCESS ROAD 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

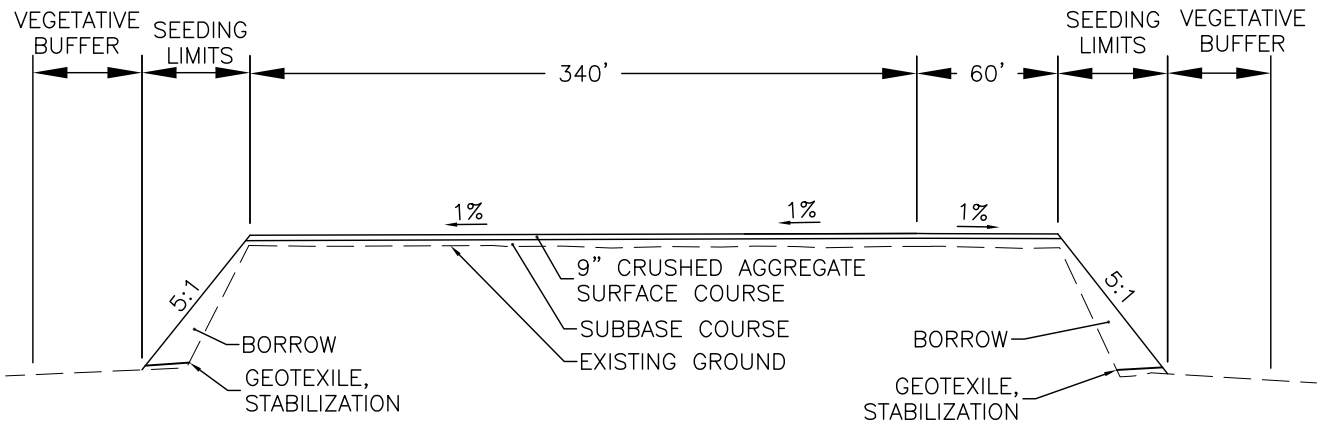
APPLICANT/AGENT: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, Ak 99709

MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

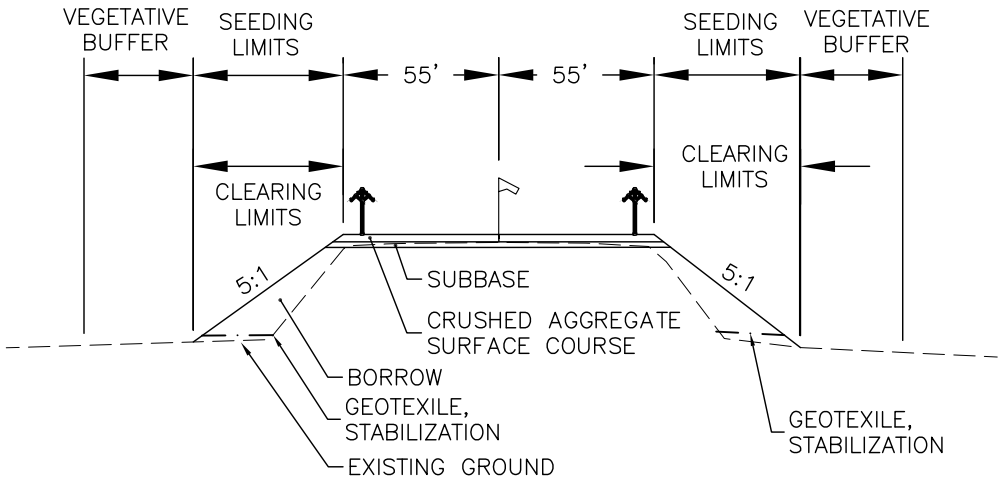
RUNWAY, TAXIWAY, AND ACCESS ROAD TYPICAL SECTIONS

DATE: NOVEMBER 2022 | FIGURE 5 OF 9

H:\Projects\Communities\Marshall\00371 Marshall Airport Imprv\04 PS&E\13 Figures\TYP SECTIONS Wetland figs-FIG 5 Thu, 15/Dec/22 01:33pm



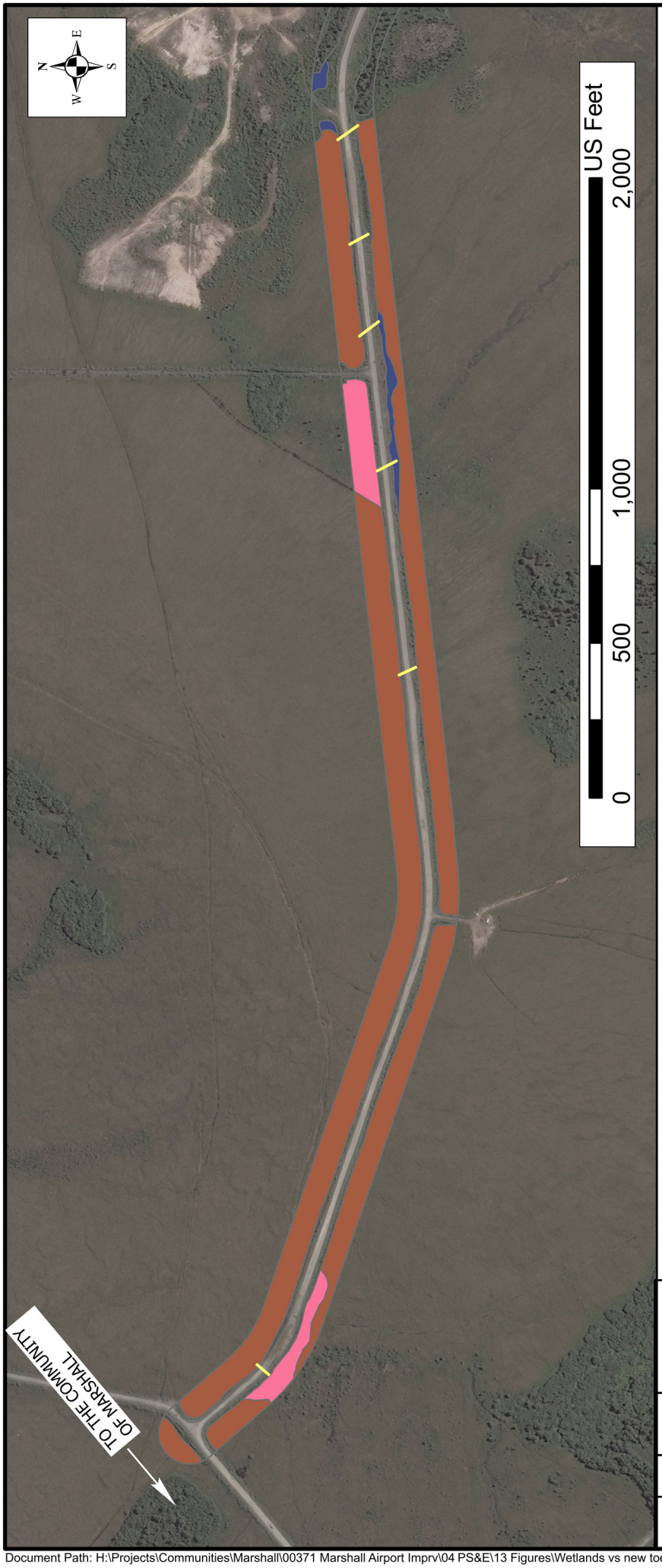
APRON TYPICAL SECTION
NTS



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



WETLAND TYPE

COWARDIN

- PEM1C
- PEM1F
- PSS1/3B
- PSS1/EM1B
- PSS1/EM1C
- PSS1B
- PSS1C
- PSS3/1B
- PSS3/EM1B
- PUBH
- R3UBH
- Upland
- <all other values>

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Applicant/Agent: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, AK 99709

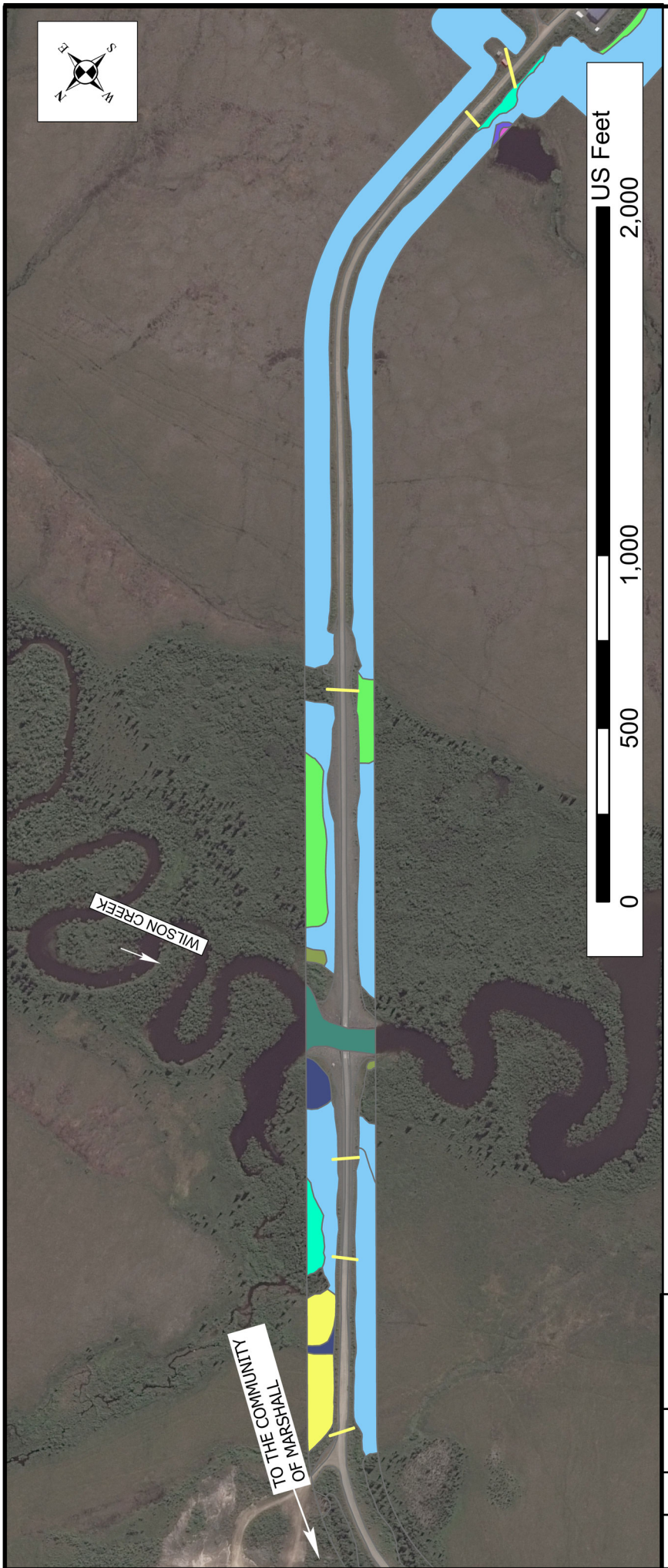
MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

WETLAND TYPE ON AIRPORT ACCESS ROAD (1 OF 2)

DATE: DECEMBER 2022

Figure 7 of 9

Document Path: H:\Projects\Communities\Marshall\00371 Marshall Airport Imprv\04 PS&E\13 Figures\Wetlands vs new toe.aprx



WETLAND TYPE

COWARDIN

- PEM1C
- PEM1F
- PSS1/3B
- PSS1/EM1B
- PSS1/EM1C
- PSS1B
- PSS1C
- PSS3/1B
- PSS3/EM1B
- PUBH
- R3UBH
- Upland
- <all other values>

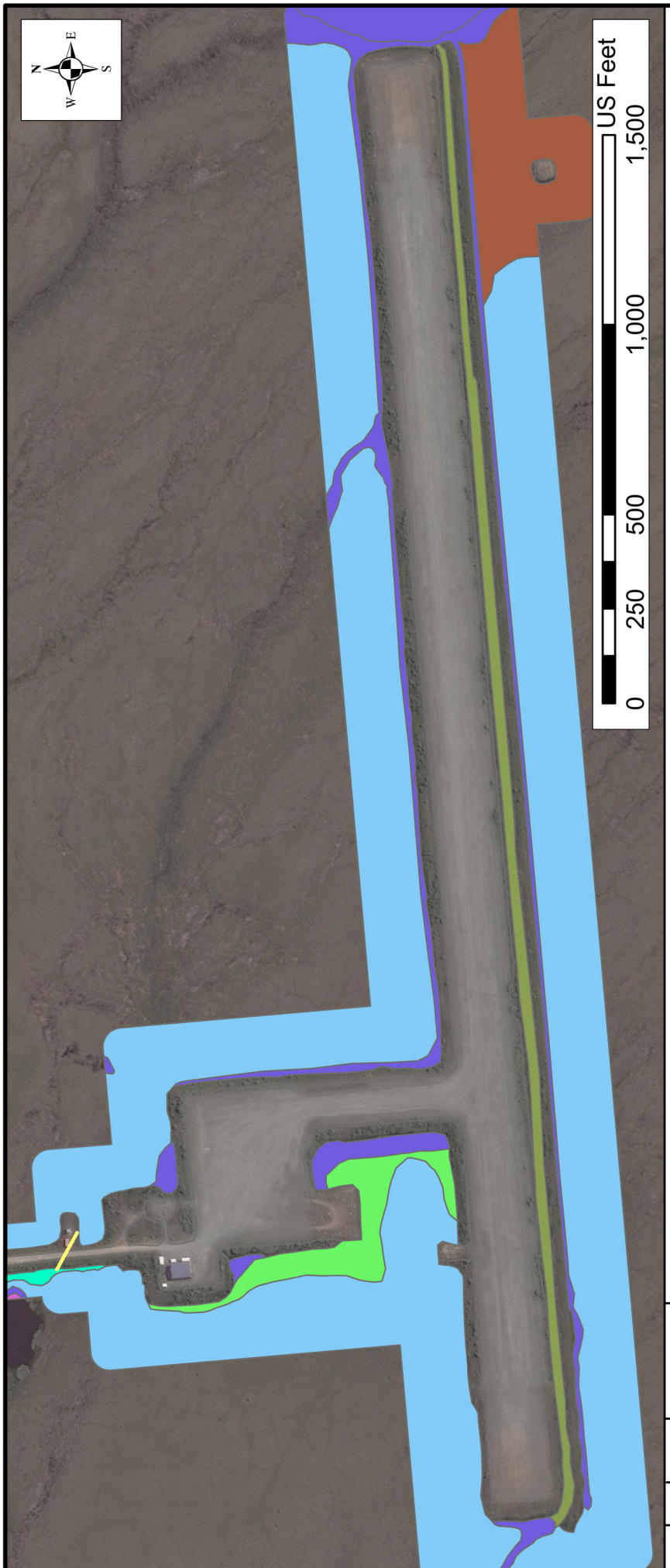
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Applicant/Agent: AK DOT&PF, Northern Region
2301 Peger Rd. Fairbanks, AK 99709

MARSHALL AIRPORT IMPROVEMENT PROJECT
PROJECT NUMBER: NFAPT00371

WETLAND TYPE ON AIRPORT ACCESS ROAD (2 OF 2)

DATE: DECEMBER 2022 | Figure 8 of 9

Document Path: H:\Projects\Communities\Marshall\00371 Marshall Airport Imprv\04 PS&E\13 Figures\Wetlands vs new toe.aprx



WETLAND TYPE

COWARDIN

- PEM1C
- PEM1F
- PSS1/3B
- PSS1/EM1B
- PSS1/EM1C
- PSS1B
- PSS1C
- PSS3/1B
- PSS3/EM1B
- PUBH
- R3UBH
- Upland
- <all other values>

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

WETLAND TYPE AT AIRPORT

DATE: NOVEMBER 2022 | Figure 9 of 9

Document Path: H:\Projects\Communities\Marshall\00371 Marshall Airport Imprv\04 PS&E\13 Figures\Wetlands vs new toe.aprx

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 https://dec.alaska.gov/water/wastewater/ fees#IP-Fee. 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.

I. Identify the applicable federal license or permit*

Permit License Number: TBD POA-XXXX-XXXX Federal Agency: ☒ USACE, ☐ FERC, or ☐ Other: _____

*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)

X-

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

Applicant Information

Brett (First) | (Middle) | Nelson (Last)

AK Dept. of Transportation & Public Facilities (Company) | (Title)

2301 Peger Road (Mailing Address Street or PO Box) | Fairbanks (City) | AK (State) | 99709 (Zip)

brett.nelson@alaska.gov (Email) | 907-451-2238 (Phone) | (Fax (optional))

Point of Contact or Agent Information

(First) | (Middle) | (Last)

(Company) | (Title)

(Mailing Address or PO Box) | (City) | (State) | (Zip)

(Email) | (Phone) | (Fax (optional))

Statement of Authorization

I hereby authorize _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit/certification application.

_____ SIGNATURE OF APPLICANT

_____ DATE

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

Marshall Airport Improvements
Project Name or Title

address n/a (Project Street Address (if applicable)) | Marshall (City) | AK (State) | 99585 (Zip)

61.873500 **Latitude** (Decimal Degrees, 6 places) | -162.043300 **Longitude** (Decimal Degrees, 6 places)

Other Location Descriptions if known:

(State Tax Parcel ID) | Marshall (Kusilvak Census Area) (Municipality) | 25, 26, 31, 36 (Section) | 21 N (Township) | 69 W, 70 W (Range)

Estimated Start Date | **Estimated End Date**

Directions to the site:

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

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

For fill material, identify the material source: _____

Types of material being discharged and the amount of each type in cubic yards: _____ Type _____ yd^3 _____ Type _____ yd^3

Surface area in acres of wetlands or other waters filled: Acres: _____ or, linear feet: _____

Is dredging involved? ☐ Yes, ☐ No; If yes, how much? _____ acres and volume _____ yd^3.

a. Is the dredging considered a ☐ new project, or is it ☐ maintenance? If maintenance, how frequent? _____

b. Proposed Placement of dredged material: (provide center coordinates of placement area)

☐ Upland, _____ Latitude _____ Longitude

☐ In water, _____ Latitude _____ Longitude

☐ Other: _____ Latitude _____ Longitude

c. Has a Tier analysis been conducted of the dredged prism? ☐ Yes, ☐ No; If yes, attach tier analysis and sample results if any. Note, If marked no, this may later be required upon review of request.
(for example of Tier analysis, see EPA Inland Testing Manual or USACE Seattle District Civil Works DMMP User Manual)

Is any portion of the work already complete? ☐ Yes, ☐ No If yes, describe the completed work:

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)]

Name and location of receiving waters, and geographical extent potentially affected by the proposed discharge:

Location of potential discharge (Decimal Degrees, 5 places minimum), describe if necessary:

	Activity		Description	Receiving Waterbody Name	Latitude	Longitude
	Dredge	Fill				
a.	☐	☐				
b.	☐	☐				
c.	☐	☐				
d.	☐	☐				
e.	☐	☐				

Is the project within 1,500 feet of a known contaminated site: ☐ Yes, ☐ No (see DEC Contaminated Sites Program website).

If yes, describe the identified contaminated site(s) or groundwater plume within 1,500 feet.

Parameter(s) of Concern: (check all that apply): ☐ Turbidity, ☐ Sediment, ☐ Petroleum Hydrocarbons, ☐ Metals, ☐ Other, _____

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.:

Impaired Waters: 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? (See http://dec.alaska.gov/water/water-quality/impaired-waters.aspx for the most recently approved report and category listings.) ☐ Yes, ☐ No

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. (if additional space is needed, attach separate sheet)

(A) **Social Importance Analysis**:
(select one or more areas, and describe below)

- ☐ community services provided;
- ☐ public health or safety improvements;
- ☐ infrastructure improvements;
- ☐ education and training;
- ☐ cultural amenities;
- ☐ recreational opportunities

(B) **Economic Importance Analysis**:
(select one or more areas, and describe below)

- ☐ employment, job availability, and salary impacts;
- ☐ tax base impacts;
- ☐ expanded leases and royalties;
- ☐ commercial activities;
- ☐ access to resources;
- ☐ access to a transportation network

Describe (checked items above or attach as separate document)

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)]

(Example: 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)]

List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in this Application.

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

* 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(s) listed in Section Error! Reference source not found. (if more than can be entered here, please attach a supplemental list)

a.
Name(s)
Address
City State Zip

b.
Name(s)
Address
City State Zip

c.
Name(s)
Address
City State Zip

d.
Name(s)
Address
City State Zip

e.
Name(s)
Address
City State Zip

f.
Name(s)
Address
City State Zip

VII. Attachments: (as much as available for the pre-filing meeting request)

☐ *Required for the §401 Certification Request, Not required for pre-filing meeting request*: Copy of the complete federal license or permit application requiring certification under 33 U.S.C. 1341 (CWA §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)

☐ Figures and/or Drawings/Plan Sets

☐ Tier Analysis of dredged material

☐ Sampling Results

☐ Baseline Water Quality Information

☐ Other/Comments

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.

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 DEC-401Cert@alaska.gov.

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 https://dec.alaska.gov/water/wastewater/fees#IP-Fee

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)]

Project Name: 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?

Location: 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).

Directions to the site: 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.

Nature of the Activity: 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.

Project Purpose: 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.

Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. 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.

Surface Areas of Wetlands or Other Waters Filled. 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.

Dredging: 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 EPA Inland Testing Manual or the USACE Seattle District Civil Works DMMP User Manual 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.

Is any portion of the work already complete: 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)]

Name and Location of potential discharge. 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.

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

Contaminated Sites: 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 (dec.alaska.gov/spar/csp.aspx) for ability to search via map, database, and background summaries.

Parameters 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. 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.

Impaired Waters: 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 http://dec.alaska.gov/water/water-quality/impaired-waters.aspx 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)]

Nature of potential discharge and potential environmental impacts on the receiving water: 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 http://dec.alaska.gov/water/wastewater/wetlands, 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 https://dec.alaska.gov/water/wastewater/fees#IP-Fee*

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 whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. 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: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Brett Middle - Last - Nelson	First - same Middle - Last -
Company - Alaska Dept. Transportation and Public Facilities	Company -
E-mail Address - brett.nelson@alaska.gov	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S 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 CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 907-451-2238 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Marshall Airport Improvements

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Poltes Slough/Yukon River	Address N/A
15. LOCATION OF PROJECT	City - Marshall State- Alaska Zip- 99585
Latitude: ◦N 61.8735 Longitude: ◦W -162.0433	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality Marshall (Kusilvak Census Area)

Section - 25, 26, 31, 36 Township - 21 N Range - 69 W, 70 W

17. DIRECTIONS TO THE SITE

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

18. 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-foot 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; replace FAA runway end identifier lights (REILs) (in the same location); replace airport lighting, segmented circle, and navigational aids, and 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.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

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.

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 access to the Marshall for supplies and medical emergencies other than by snowmachine or the river. The existing airport does not meet FAA safety and capacity guidelines and is degrading.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount 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 Waters Filled (see instructions)

Acres 9.7

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See attached supplemental information.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

N/A

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- Yukon Delta National Wildlife Refuge: 807 Eddie Hoffman State Highway

City - Bethel State - Alaska Zip - 99559

b. Address- Village of Marshall: 50 Yukon Avenue

City - Marshall State - Alaska Zip - 99585

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 Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

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 made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Brett Nelson Digitally signed by Brett Nelson DN: cn=Brett Nelson, o=DOT&PF, ou=Northern Region, email=brett.nelson@alaska.gov, c=US Date: 2022.12.30 13:49:15 -09'00' 12/30/2022

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States 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 statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

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.millller1@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)

Type	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?
No

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?
No

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.
https://dec.alaska.gov/water/water-quality/integrated-report/

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?
No

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 Number	Date Applied	Date Approved	Date Denied

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

*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@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; 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; leah_schofield@nps.gov; pammillerarctic@gmail.com; PLavin@defenders.org; peter.Nagel@alyeska-pipeline.com; 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@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); 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

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 patrick.a.atkins@usace.army.mil, 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 regpagemaster@usace.army.mil. 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

(Note: if the above link isn't clickable or part of the link is cut off, please copy and paste the entire URL into your browser's address bar and press Enter)

If you would like to be removed from this mailing list, please reply with "Opt Out" in subject line.

**NOTICE TO EDITORS: This public notice is provided as background information and is not a request or contract for publication.

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

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.msg

---

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) <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; nmfs.akr.habitat@noaa.gov; julie.scheurer@noaa.gov; greg.balogh@noaa.gov; Emily_A_Johnson@nps.gov; bella_furr@nps.gov; leah_schofield@nps.gov; pammillerarctic@gmail.com; PLavin@defenders.org; peter.Nagel@alyeska-pipeline.com; 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 <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

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 patrick.a.atkins@usace.army.mil, 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 regpagemaster@usace.army.mil. 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

(Note: if the above link isn't clickable or part of the link is cut off, please copy and paste the entire URL into your browser's address bar and press Enter)

If you would like to be removed from this mailing list, please reply with "Opt Out" in subject line.

**NOTICE TO EDITORS: This public notice is provided as background information and is not a request or contract for publication.

**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

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
To: Nelson, Brett D (DOT) <brett.nelson@alaska.gov>
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