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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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 120acre 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).

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

Study Area Wetlands and Waters

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

Introduction

1.0 INTRODUCTION

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

The field data collected in September 2022 was used in conjunction with topographical base maps, aerial photography, and other data sources to produce the figures and findings presented in this report.

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

1.1 STUDY AREA LOCATION

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

The study area is within the Marshall D1 1:63,360 U.S. Geological Survey (USGS) quadrangle map. The project is within the Seward Meridian and crosses 4 Public Land Survey System sections. The complete Township, Range, and Section list is shown in Table 1 with the central coordinate location.

Table 1 Study Area Location

Meridian	Township	Range	Sections	Centroid Latitude (DD)	Centroid Longitude (DD)	
Coword	24 N	69W	31	64 9725	162 0422	
Seward		70W	25, 26, 36	61.8735	-162.0433	





Study Area

0 0.5 1 1.5 (At original document size of 8.5x11) 1:63,360 1 inch = 1 miles

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Marshall Airport Improvement Project

Figure Location

Figure Number

1



Existing Data and Methodology

2.0 EXISTING DATA AND METHODOLOGY

2.1 EXISTING DATA

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

2.1.1 National Wetland Inventory

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

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

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

Table 2 National Wetland Inventory Mapping

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

*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)



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Marshall Airport Improvement Project

Figure NWI & NHD Mapping

Figure Number **2**



Existing Data and Methodology

2.1.2 Major Land Resource Areas

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

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

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

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

2.1.3 Watersheds

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

2.1.4 Rivers and Streams

USACE Special Public Notice (SPN) 2020-00339 Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2020b) superseded 2010 guidance (USACE 2010). However, in 2021 the Environmental Protection Agency (EPA) published guidance directing use of pre-2015 Waters of the U.S. instructions (EPA 2022a). Therefore, to classify study area streams, this report refers to SPN 2010-45 (USACE 2010).

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

Existing Data and Methodology

Traditionally Navigable Waters

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

The USACE Alaska District lists the Navigable Waters in Alaska (USACE 1995). All streams flowing through the study area flow into the Yukon River; designated as TNW.

Relatively Permanent Waters

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

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

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

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

National Hydrography Dataset

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

2.1.5 Soil Survey

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

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

Existing Data and Methodology

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

Table 3 Soil Survey

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





Study Area

Map Unit (percent hydric components)

- Nulato Hills-Southern Seward Peninsula Highlands-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
	(At original do	ocument size of a	E.5x11)
	1:24,000	1 inch = 2,00	0 feet

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Project

3

Marshall Airport Improvement Project

Figure Soils Mapping

-Figure Number



Existing Data and Methodology

2.1.6 Climate Data

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

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

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

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

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

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

M = Month includes days with missing data

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

Existing Data and Methodology

2.1.7 Sensitive and Rare Species

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

2.1.8 Non-Native Species

The Alaska Exotic Plants Information Clearinghouse (AKEPIC) tracks non-native plant species in Alaska and provides biographies and risk assessments, to include an invasiveness ranking. There is currently no recorded AKEPIC data within or around the study area (AKEPIC 2022).

2.2 METHODOLOGY

2.2.1 Field Data Collection

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

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

- Wetland Determination (WD) Plots. At these sites, investigators recorded detailed descriptions of vegetation, hydrology, and soils on field data forms. Wetland status for this plot type was determined based on the presence or absence of hydrophytic vegetation, hydrology, and hydric soils.
- 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.
- Stream Crossing (SC) Points. Photographs and GPS locations were taken when streams were encountered. Information on the stream status as a seasonal or perennial Relatively Permanent Waters (USACE 2010) and additional stream data were collected.
- 4. Waterbody (WB) Points. Photographs and GPS locations were taken when ponds were encountered.

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

Existing Data and Methodology

- percent coverage of all plant species (tree, shrub, and herbaceous species) and their wetland indicator status according to the *2020 National Wetland Plant List* (NWPL, USACE 2020a);
- vegetation type;
- soil characteristics;
- visible or readily apparent hydrologic characteristics;
- physical characteristics including aspect, elevation, landform, and topography;
- location information including latitude and longitude (in NAD83 2011, decimal degrees);
- wetland descriptors including HGM and Cowardin classifications;
- and indications of prior disturbance and whether current conditions represent the 'new normal'.

Plant Data

Alaska plant indicator statuses follow the Alaska 2020 NWPL (USACE 2020a). Plant indicator statuses are listed in Appendix B.

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

Hydric Soils Assessment

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

Hydrology

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

Field Data

Field plot data were collected at 66 sites throughout the study area, but primarily focused on areas where both NWI and NHD mapping (Sections 2.1.1 and 2.1.4, Figure 2), or landscape position showed potential for wetlands and waters. Field site locations were determined using aerial photographs and GPS. Field data were entered into a project database where the data were reviewed; queries were generated from the database to provide the information needed for mapping and results analyses.

Existing Data and Methodology

Field data were collected 11, 12, 14, and 18, 2022, by HDR Inc. Professional Wetland Scientist Zach Halstead. The plots collected are shown in Table 5. Field forms and photos for all WD plots, and photos of FVP, SC, and WB plots are presented in Appendix C.

Table 5 Field Plots

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

2.2.2 Mapping

Final mapping (wetland boundaries, HGM classification, Cowardin code, and Vegetation Type) was completed using digital, true color orthoimagery collected by the WorldView-2 satellite on July 12, 2021, that maintains a resolution of 0.5-meters in ESRI's ArcMap GIS (10.8) environment.

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

Mapping polygons were drawn to delineate differences among the four classification systems used to attribute each polygon. Polygons were drawn around all features. When stream boundaries were not visible due to overhanging vegetation, polyline features were drawn to indicate location. Water features were delineated at a scale of 1:400 (one-inch equals 33 feet), while delineation of vegetation boundaries occurred at a scale of 1:1,200 (one inch equals 100 feet).

Results

3.0 **RESULTS**

3.1 WETLANDS AND WATERS

The field verified wetland and waters totals are shown in Table 6. Figure 4 shows an overview of the Wetlands and Waters in the study area. Detailed figures for the study area are provided in Appendix D.

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

Table 6 Wetlands and Waters

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

1,000 0 500 1,500 Feet (At original document size of 8.5x11) 1:14,000 1 inch = 1,166.67 feet



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Project

Marshall Airport Improvement Project

Figure

Wetlands and Waters Overview

Figure Number 4



Results

3.1.1 Cowardin Classification

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

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

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

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters
Wetlands				
	PSS1	1.0	0.8	1.3
Deciduous Shrub	PSS1/EM1	47.5	39.5	63.6
	PSS1/3B	1.2	1.0	1.6
Тс	otal Deciduous Shrub	49.7	41.3	66.5
	PSS3/EM1	16.5	13.7	22.1
Evergreen Scrub	PSS3/1	0.7	0.6	0.9
	Total	17.2	14.3	23.0
Herbaceous	PEM1	7.3	6.1	9.8
	Total Herbaceous	7.3	6.1	9.8
	Total Wetlands	74.3	61.8	99.5
Waters				·
Pond	PUB	<0.1	<0.1	<0.1
Tota	I 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*		100.0]

Table 7 Cowardin Classifications

*Apparent inconsistencies in sums are the results of rounding.

Results

3.1.2 Project Hydrogeomorphic Classification

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

The HGM classification is based on a wetland's: (1) position in the landscape or geomorphic setting, (2) dominant source of water, and (3) hydrodynamics of the water in the wetland (Brinson 1993). The purpose of the HGM classification is to provide a mechanism to account for the natural variation inherent to wetlands, particularly when wetland functions are being assessed. For example, a riverine wetland will generally have a much higher opportunity to export organic carbon than an isolated depressional wetland due to the riverine wetland's landscape position and hydrodynamics. Table 8 provides a summary of the acres of each HGM type as currently classified within the study area.

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		

Table 8 Hydrogeomorphic Classification

*Apparent inconsistencies in sums are the results of rounding.

The HGM classes identified in the study area are shown on the detailed figures in Appendix D and discussed in the following section. The HGM descriptions are taken from ADEC Technical Report WRP-DE-1999 (ADEC 1999), an application of the HGM approach for precipitation driven wetlands on discontinuous permafrost in Interior Alaska.

Results

Riverine Wetlands

Riverine wetlands are found within active floodplains and riparian corridors associated with river and stream channels. Dominant water sources are subsurface hydraulic connections or overbank flow from nearby river and stream channels and wetlands. Groundwater discharge from surficial aquifers, overland flow from neighboring uplands and small tributaries, and precipitation may contribute additional inputs. Riverine wetlands lose surface water by flow returning to the channel after flooding or precipitation events. Subsurface water loss generally occurs through discharge to nearby active channels, evapotranspiration, and vertical migration to deeper groundwater (ADEC 1999).

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



Photo 1: Riverine HGM Wet Herbaceous Wetland

Results

Slope Wetlands

Slope wetlands normally occur where there is a discharge of groundwater to the land surface. They exist on sloping land surfaces from steep hillslopes and swales to nearly level terrain. Slope wetlands are usually incapable of depressional water storage. Principal water sources are groundwater return flow and interflow from surrounding non-wetlands and precipitation. Hydrodynamics are dominated by downslope unidirectional flow. Slope wetlands can occur in nearly level landscapes if groundwater discharge is a dominant source to the wetland surface. Slope wetlands lose water by subsurface flows, surface flows, and by evapotranspiration (ADEC 1999). Examples of slope wetlands in Alaska include patterned fens, hillside seeps, spring-fed wetlands, and wetlands at the base of bluffs or toeslopes where groundwater is discharged near the surface.

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

Photo 2: Slope HGM Wetland



Results

Depressional Wetlands and Waters

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

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

Riverine Channel Waters

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

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

Results

Photo 3: Perennial Stream



3.1.3 Streams

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

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

Table 9 Streams

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

*Apparent inconsistencies in sums are the results of rounding.

Results

3.1.4 Jurisdictional Status of Wetlands and Waters

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

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

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

3.2 VEGETATION

3.2.1 Project Vegetation Types

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

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

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

Results

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

*Apparent inconsistencies in sums are the results of rounding

3.2.2 Plant Species

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

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4.0 **REFERENCES**

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APPENDICES

Appendix A Plant List

Appendix A PLANT LIST

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

Indicator status abbreviations are as follows:

- OBL: Obligate Wetland Plants (Almost always occur in wetlands)
- FACW: Facultative Wetland Plants (Usually occur in wetlands, but may occur in non-wetlands)
- FAC: Facultative Plants (Occur in wetlands and non-wetlands)
- FACU: Facultative Upland Plants (Usually occur in non-wetlands, but may occur in uplands)
- UPL: Upland Plants (Almost always occur in non-wetlands)
- NL: Not listed in the National Wetland Plant List (Assigned a status of UPL)
- N/A: Not applicable (Applies to unkeyed plants listed by Genus or larger group)

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

Trees

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

Saplings/Shrubs

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

Appendix A Plant List

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

Herbaceous

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

Appendix A Plant List

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

Appendix B Field Data Forms and Photos

Appendix B FIELD DATA FORMS AND PHOTOS
WETLANDS AND WATERS DELINEATION REPORT

Appendix C Wetlands and Waters Detail Figures

Appendix C WETLANDS AND WATERS DETAIL FIGURES







WETLANDS AND WATERS DELINEATION REPORT

Appendix D Vegetation Detail Figures

Appendix D VEGETATION DETAIL FIGURES











Wetlands and Waters Delineation Report

Appendix B, Data Forms and Photos

Marshall Airport and Access Road Improvements

November 14, 2022

Prepared for:



Alaska Department of Transportation and Public Facilities

2301 Peger Road Fairbanks, AK 99709

Prepared by:

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

WETLAND DETERMINATION DATA FORM -	
Project: Marshall Airport Borough/City: Kusilva	K CA Date: 9/11/2022
Applicant/Owner: ADOT	Sampling Point #: 500
Investigator(s): ZH/BC Firm: H	IDR Alaska, Inc.
Lat. (dec.") 61. 864262 Long. 162.017222 ±' NAD 83 Recorded c	on GPS?: 🔀 Marked on map? 🗙 Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: (inear/convex/concave Shape up/downslope: linear/convex/concave Shape up/downslope: linear/convex/convex/concave Shape up/downslope: linear/convex/convex/concave Shape up/downslope: linear/convex/con	
	_ Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circu	
Are Vegetation M, Soil M, or Hydrology Maturally problematic? In Dry Season? Ye	es No If needed, explain answers here.
SUMMARY OF FINDINGS	· · · · · · · · · · · · · · · · · · ·
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	
Hydric Soil Present? Yes No X within a wetland?	
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total >100%. Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3")	Dominance restworksneet.
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. None	Number of Dominant Species 7 (A)
2 6	Total Number of Dominant
3 7 7	Species Across All Strata: (B)
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: 87.5 (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
1. Hopibal, 15 Y FACU 7. Vac. V.t. 3 FAC 2. Sal. arb, 5 Y FACW 8. Emp. nig. 1 FAC	FACW species 13 x2= 26
2. Sal. arb, 5 4 FACW 8. Emp. nig. 1 FAC 3. Sal. bar, 5 4 FAC 9. Bet. s. Sa. 5 4 FAC	FAC species 55 X3= 165
4. Vac. Uli. 10 Y FAC 10. Alu. Sin. 3 FAC	FACU species 20 X4= 80
5. Rho, tom, 5 Y FACW11.	UPL + NL species X5=
6. Bet, nan, 3 FAC 12	Column Totals: 88 (A) 271 (B)
Total Sapling/Shrub Cover: 55	
50% of total cover: 27,5 20% of total cover:	Prevalence Index = B/A = 3,08
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Ladi ani. 10 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. CKa, ang, 5 FACU 13.	Dominance Test is >50%
3. Des, cae, 10 Y FAC 14 4. Eri: Vas, 3 FACW15	\swarrow Prevalence Index is ≤ 3.0
5. <u>Ped. sp. 1</u> 16	Morphological Adaptations ¹ (Provide supporting
6. <u>Cel. Can. 5</u> <u>FAC</u> 17	data in Remarks or on a separate sheet)
7 18 1	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19 19	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: <u>34</u>	
50% of total cover: 17 20% of total cover: 6.8	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 5×5 % of bare ground: 15	Vegetation Yes <u>No</u>
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?
Remarks:	
Plot located = 5' upslope from toe of slope of runwar	y prism

US Army Corps of Engineers

Depth Horizon <u>Soil Matrix</u>	Redox Features		a,a dip.	
<u>(in.) (opt.)</u> <u>Color (moist) %</u> ⊘ ~ (∂);	Color (moist) % Type ¹ I	<u>_oc² Texture</u>	(pos/ neg) (or	Remarks use comment nu
I-Z A MOURZIZ IM		- GRLD		5:11
2-20 C 1042 5/4 100 -		GRID		-11
				- 11
	i interesti di la constante di	- 1. A.		N. MAR
	8		and the second	
		<u></u>		
¹ Type: C = Concentration, D = Depletion, RM = Red	uced Matrix, CS=Coated Sand Grains	Location: PL = Pore I	ining, RC = Roo	t Channel, M =
Hydric Soil Indicators (check ones that apply, me				gui Yuy
Standard Indicators:	Indicators for Problematic Hydri	A 1	- Jaco LR	11.
Histosol or Histel (A1)	Depleted Below Dark Surface	e (A11) 10	Alaska Color C	hange ⁴ (TA4)
Histic Epipedon (A2) (8-16" organics, satd, underlain by mineral soil with chroma ≤2)	Depleted Matrix (F3)	N	Alaska Alpine S	Swales (TA5)
M Black Histic (A3)	N Redox Dark Surface (F6)	N	Alaska Redox v	
Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit	<u>M</u> Depleted Dark Surface (F7)	N	AK Gleyed with Redder Und	out Hue 5Y or erlying Laver
M Thick Dark Surface (A12)	Redox Depressions (F8)	N	_α,α-dipyridyl po	
Alaska Gleyed (A13)	Red Parent Material (F21)	N	Other (Low orga	nic matter, low iro
Alaska Redox (A14)	Very Shallow Dark Surface (F	-22)	Supplement; e	eveloped., see p.9 xplain in Remarks
Alaska Gleyed Pores (A15)	³ One indicator of hydrophytic vege	tation, one primary ind	icator of wetland	hydrology, and
	appropriate landscape position mu ⁴ Give details of color change in Re		isturbed or prob	ematic.
Restrictive Layer (if present)	Drainage Class:			The second second
Type: Nme	Soil Map Unit Name:	Hydric Soil Prese	nt? Yes_	No A
Depth (inches):/A				
3. No hydric soil indiators o	bserved ; Fill	A Star	Ry.	
	ply, measure from soil surface):	Secondary Indicato	rs lat least 2 are	required)
Primary Indicators (any one indicator is sufficient)		Mater-Stained	Leaves (B9)	required)
Primary Indicators (any one indicator is sufficient)	ce Soil Cracks (B6)	$\frac{\mathcal{N}}{\mathcal{N}}$ Water-Stained $\frac{\mathcal{N}}{\mathcal{N}}$ Drainage Patte	Leaves (B9) ms (B10)	
Primary Indicators (any one indicator is sufficient) Surface Water (A1) M Surface High Water Table (A2) (w/in 12") M Inund	ce Soil Cracks (B6) lation Visible on Aerial Imagery (B7)	$\frac{N}{M}$ Water-Stained $\frac{N}{M}$ Drainage Patter $\frac{N}{M}$ Oxid'd Rhizosp	Leaves (B9) ms (B10) heres on Living F	
Primary Indicators (any one indicator is sufficient)	ce Soil Cracks (B6)	$\frac{\mathcal{N}}{\mathcal{N}}$ Water-Stained $\frac{\mathcal{N}}{\mathcal{N}}$ Drainage Patter $\frac{\mathcal{N}}{\mathcal{N}}$ Oxid'd Rhizosp $\frac{\mathcal{N}}{\mathcal{N}}$ Presence of Re	Leaves (B9) ms (B10)	Roots (C3) (with
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N High Water Table (A2) (w/in 12") N Saturation (A3) (w/in 12") Spare Water Marks (B1) N	ice Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15)	$\frac{\mathcal{N}}{\mathcal{N}}$ Water-Stained $\frac{\mathcal{N}}{\mathcal{N}}$ Drainage Patter $\frac{\mathcal{N}}{\mathcal{N}}$ Oxid'd Rhizosp $\frac{\mathcal{N}}{\mathcal{N}}$ Presence of Re	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w <i>l</i> in	Roots (C3) (with
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N Surface High Water Table (A2) (w/in 12") N Inund Saturation (A3) (w/in 12") Span Water Marks (B1) M Mark Sediment Deposits (B2) Hydro	ice Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1)	Μ Water-Stained Μ Drainage Patte Μ Oxid'd Rhizosp Μ Presence of Re (pos. α,α or soi Μ Salt Deposits (0	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w <i>l</i> in	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N Surface High Water Table (A2) (w/in 12") N Inund Saturation (A3) (w/in 12") Span Water Marks (B1) M Martin Sediment Deposits (B2) N Hydro Drift Deposits (B3) N Dry-S	ice Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) eason Water Table (C2) (w/in 12"-24"	$ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Water-Stained} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Drainage Patter} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Oxid'd Rhizosp} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Presence of Re} \\ (\text{pos. } \alpha, \alpha \text{ or soi} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Salt Deposits (C} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Geomorphic Point} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Geomorphic Point} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Geomorphic Point} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Geomorphic Point} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Geomorphic Point} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre} \\ \underbrace{\mathcal{N}}_{\mathcal{N}} \text{Stunted or Stre}$	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2)	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) 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	ace Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) eason Water Table (C2) (w/in 12"-24" al, 12"-40" organic)	Mater-Stained Drainage Patte Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α, α or soi Salt Deposits (C Stunted or Stree M Geomorphic Poc Shallow Aquita	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in 25) ssed Plants (D1) isition (D2) rd (D3)	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Saturation (A3) (w/in 12") Span Water Marks (B1) Mark Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-S Algal Mat or Crust (B4) Othe	ice Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) eason Water Table (C2) (w/in 12"-24"	Mater-Stained Drainage Patte Drainage Patte Drainage Patte Norman Stained Presence of Re (pos. α, α or soi Salt Deposits (C Stunted or Stre M Geomorphic Po Shallow Aquita (w/in 24", can pe	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in 25) ssed Plants (D1) isition (D2) rd (D3)	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Saturation (A3) (w/in 12") Span Water Marks (B1) Mark Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-S Algal Mat or Crust (B4) Othe Iron Deposits (B5) Mark	ace Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) eason Water Table (C2) (w/in 12"-24" al, 12"-40" organic)	Mater-Stained Drainage Patte Drainage Patte Drainage Patte Norman Stained Presence of Re (pos. α, α or soi Salt Deposits (C Stunted or Stre M Geomorphic Po Shallow Aquita (w/in 24", can pe	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in (5) ssed Plants (D1) sstion (D2) rd (D3) rch H ₂ O w/in 12") hic Relief (D4) (ca	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) 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 High Mater Crust (B4) N Inon Deposits (B5) N Field Observations (in. from ground surface): V	ace Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) teason Water Table (C2) (w/in 12"-24" ral, 12"-40" organic) r (explain)	$ \frac{\mathcal{N}}{\mathcal{N}} Water-Stained \\ \frac{\mathcal{N}}{\mathcal{N}} Drainage Patter \\ \frac{\mathcal{N}}{\mathcal{N}} Oxid'd Rhizosp \\ \frac{\mathcal{N}}{\mathcal{N}} Presence of Receives a construction of the construction $	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in (5) ssed Plants (D1) sstion (D2) rd (D3) rch H ₂ O w/in 12") hic Relief (D4) (ca	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N High Water Table (A2) (w/in 12") N Saturation (A3) (w/in 12") Span Water Marks (B1) N Sediment Deposits (B2) N Drift Deposits (B3) Dry-S Nalgal Mat or Crust (B4) N Iron Deposits (B5) Othe	Depth of water (in.)	$ \frac{\mathcal{N}}{\mathcal{N}} Water-Stained \\ \frac{\mathcal{N}}{\mathcal{N}} Drainage Patter \\ \frac{\mathcal{N}}{\mathcal{N}} Oxid'd Rhizosp \\ \frac{\mathcal{N}}{\mathcal{N}} Presence of Receives a construction of the construction $	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in (5) ssed Plants (D1) sstion (D2) rd (D3) rch H ₂ O w/in 12") hic Relief (D4) (ca	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N High Water Table (A2) (w/in 12") Inund Saturation (A3) (w/in 12") Span Water Marks (B1) Mart I Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-S Nalgal Mat or Crust (B4) Othe Field Observations (in. from ground surface): Surface Water Present? Yes No	Lee Soil Cracks (B6) dation Visible on Aerial Imagery (B7) sely Vegetated Concave Surface (B8) Deposits (B15) ogen Sulfide Odor (C1) eason Water Table (C2) (w/in 12"-24" al, 12"-40" organic) r (explain) Depth of water (in.)	$ \frac{\mathcal{N}}{\mathcal{N}} Water-Stained \\ \frac{\mathcal{N}}{\mathcal{N}} Drainage Patter \\ \frac{\mathcal{N}}{\mathcal{N}} Oxid'd Rhizosp \\ \frac{\mathcal{N}}{\mathcal{N}} Presence of Receives a construction of the construction $	Leaves (B9) ms (B10) heres on Living F duced Iron (C4) color change w/in (5) ssed Plants (D1) sstion (D2) rd (D3) rch H ₂ O w/in 12") hic Relief (D4) (ca	Roots (C3) (with 12")
Primary Indicators (any one indicator is sufficient) Surface Water (A1) N High Water Table (A2) (w/in 12") N Saturation (A3) (w/in 12") Span Water Marks (B1) N Sediment Deposits (B2) N High Mater Crust (B4) Drift Deposits (B3) No No Sufface Water Present? Yes No Seeping in at that	Depth of water (in.)	Mater-Stained Morial Drainage Patte Normal Oxid'd Rhizosp Presence of Re (pos. α,α or soi Salt Deposits (C Stunted or Stre More Stallow Aquita (w/in 24", can pe Microtopograph FAC Neutral Te	Leaves (B9) ms (B10) heres on Living R duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2) rd (D3) rch H ₂ O w/in 12") tic Relief (D4) (ca st (D5)	Roots (C3) (with 12") uused by water)
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Surface V Saturation (A3) (w/in 12") Span Water Marks (B1) Mart I Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-Sommer No Mart I No Sufface Sediment Deposits (B3) No No Sufface No Sufface Sufface Yes No Seeping in at that Saturation Present? Yes No Seeping in at that	Depth of water (in.) Depth to water (in.) Depth to sat. (in.)	$ \frac{\mathcal{N}}{\mathcal{N}} Water-Stained \\ \frac{\mathcal{N}}{\mathcal{N}} Drainage Patter \\ \frac{\mathcal{N}}{\mathcal{N}} Oxid'd Rhizosp \\ \frac{\mathcal{N}}{\mathcal{N}} Presence of Receives a construction of the construction $	Leaves (B9) ms (B10) heres on Living R duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2) rd (D3) rch H ₂ O w/in 12") tic Relief (D4) (ca st (D5)	Roots (C3) (with 12") used by water)
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Surface V Saturation (A3) (w/in 12") Span Water Marks (B1) Mart I Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-S Mart I Other No Mart I Water Marks (B1) No No Sediment Deposits (B3) No Sediment Crust (B4) No Sediment Present? Yes No Surface Water Present? Yes Vater Table Present? Yes Saturation Present? Yes Yes No Saturation Present? Yes No Seeping in at that Saturation Present? Yes No Seturation Present?	Depth of water (in.) Depth to water (in.) Depth to sat. (in.) Depth to sat. (in.) Depth to water (in.) Depth to sat. (in.)	Water-Stained Drainage Patte Drainage Patte Drainage Patte Drainage Patte Notid'd Rhizosp Presence of Re (pos. α,α or soi Salt Deposits (C Stunted or Stre Geomorphic Pc Shallow Aquita (w/in 24", can pe Microtopograph FAC Neutral Te Wetland Hydrology	Leaves (B9) ms (B10) heres on Living R duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2) rd (D3) rch H ₂ O w/in 12") tic Relief (D4) (ca st (D5)	Roots (C3) (with 12") uused by water)
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Surface Notation (A3) (w/in 12") Span Water Marks (B1) Mart I Sediment Deposits (B2) Merror Drift Deposits (B3) Dry-Structure Notation Deposits (B4) More Present? Pield Observations (in. from ground surface): Surface Water Present? Yes No Saturation Present? Yes Yes No Saturation Present? Yes No Seeping in at that Saturation Present? Yes No Seeping in at that	Depth of water (in.) Depth to water (in.) Depth to sat. (in.) Depth to sat. (in.) Depth to water (in.) Depth to sat. (in.)	Water-Stained Drainage Patte Drainage Patte Drainage Patte Drainage Patte Notid'd Rhizosp Presence of Re (pos. α,α or soi Salt Deposits (C Stunted or Stre Geomorphic Pc Shallow Aquita (w/in 24", can pe Microtopograph FAC Neutral Te Wetland Hydrology	Leaves (B9) ms (B10) heres on Living R duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2) rd (D3) rch H ₂ O w/in 12") tic Relief (D4) (ca st (D5)	Roots (C3) (with 12") uused by water)
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A1) High Water Table (A2) (w/in 12") Inundom Surface V Saturation (A3) (w/in 12") Span Water Marks (B1) Mart I Sediment Deposits (B2) Hydro Drift Deposits (B3) Dry-S Mart I Other No Mart I Water Marks (B1) No No Sediment Deposits (B3) No Sediment Crust (B4) No Sediment Present? Yes No Surface Water Present? Yes Vater Table Present? Yes Saturation Present? Yes Yes No Saturation Present? Yes No Seeping in at that Saturation Present? Yes No Seturation Present?	Depth of water (in.) Depth to water (in.) Depth to sat. (in.) Depth to sat. (in.) Depth to water (in.) Depth to sat. (in.)	Water-Stained Drainage Patte Drainage Patte Drainage Patte Drainage Patte Notid'd Rhizosp Presence of Re (pos. α,α or soi Salt Deposits (C Stunted or Stre Geomorphic Pc Shallow Aquita (w/in 24", can pe Microtopograph FAC Neutral Te Wetland Hydrology	Leaves (B9) ms (B10) heres on Living R duced Iron (C4) color change w/in 25) ssed Plants (D1) sition (D2) rd (D3) rch H ₂ O w/in 12") tic Relief (D4) (ca st (D5)	Roots (C3) (with 12") uused by water)

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

NA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATION DATA FORM	– Alaska Region
Project: Marshall Airport Borough/City: Kusilue	K CA Date: 9/11
Applicant/Owner: ADOT	Sampling Point #: 50 /
Investigator(s): <u>ZH/BC</u> Firm	: HDR Alaska, Inc.
Lat. (dec.") 61, 864221 Long. 162,017106 ± 'NAD 83 Recorded	on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	Iform: Velles Bottom Slope (%): O Aspect: N/A
Local relief: Shape across slope: linear/ convex / concave Shape up/downslope: linear	I convex / concave NWI classification: PEMIC
Photo nos./descriptions: NEST 2 50,1 Camera#:	Veg Type (Viereck Level 4 or other): DTA3F
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wetter HGM type: Slope
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Cir	cumstances" present? Yes X No
Are Vegetation $\underline{\mathcal{M}}$, Soil $\underline{\mathcal{M}}$, or Hydrology $\underline{\mathcal{M}}$ naturally problematic? In Dry Season?	Yes <u>No X</u> If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled a	rea
Hydric Soil Present? Yes No within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % c	an total >100%.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. None 5	That are OBL, FACW, or FAC:(A)
2 6	Total Number of Dominant
3	Species Across All Strata:(B)
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 2.0 X1= 2.0
1. Bet. nan. 10 Y FAL 7	FACW species 5 X2= 76
2. Vac. uli 5 4 FAC 8.	10 00
3. Juliarb. <u>5</u> <u>4</u> FACIN 9	0
4. <u>Sul. 5(0)</u> <u>5</u> <u>FAC10</u>	
6 12.	UPL + NL species O X5= O
Total Sapling/Shrub Cover: 25	Column Totals: <u>98</u> (A) <u>249</u> (B)
50% of total cover: 12.5 20% of total cover: 5	254
Herb Stratum	Prevalence Index = $B/A = 2.54$
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Cal. can. 45 4 FAC 12.	Indexels de Maña a la de la de
2. Equ. Fly. 10 OBL 13	Hydrophytic Vegetation Indicators:
3. Car. agu. 10 UBL 14	Dominance Test is >50% Prevalence Index is ≤3.0
4. Eq. V. Crv. 3 FAC 15.	
5. <u>Des. coe.</u> <u>5</u> <u>FAC</u> 16 6 17	Morphological Adaptations ¹ (Provide supporting
718	data in Remarks or on a separate sheet)
8 19	_//_ Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 43	ALL MULTIP MARKED AND AND AND AND
50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u>	Hydrophytic
Circular 1/10-ac plot or other plot dimension: $10 \times 10^{\circ}$ % of bare ground: 5	Vegetation Yes <u>No</u> No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable) Remarks:	

SOIL		Sampling Point #: 50				
Profile Description: (Describe to the depth needed	Start Start	e absence of indicators)				
Depth Horizon <u>Soil Matrix</u>	Redox Features	α,ά dip.				
(in.) (opt.) Color (moist) % O-S Oe	<u>Color (moist) % Type1</u>	Loc ² <u>Texture (pos/ Remarks</u> neg) (or use comment number)				
5-17 Bg 10 GY 4/1 100 -		- GRLD +				
· · · · · · · · · · · · · · · · · · ·	other bufferbox " wither the	The second se				
The second se						
	Noneta -	and Street and Street And Street and Street and Street				
	Carlot Martin Land and Lands of	and a second second second second second				
	Strength Software Constraints	in the second				
¹ Type: C = Concentration, D = Depletion, RM = Redu	ced Matrix, CS=Coated Sand Grains	Location: PL = Pore Lining, RC = Root Channel, M = Matrix				
Hydric Soil Indicators (check ones that apply, mea	sure from top of mineral layers unle	ss otherwise noted):				
Standard Indicators:	Indicators for Problematic Hydri	c Soils ³ :				
Histosol or Histel (A1)	<u>M</u> Depleted Below Dark Surfac	e (A11) Alaska Color Change ⁴ (TA4)				
Mistic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Depleted Matrix (F3)	Alaska Alpine Swales (TA5)				
M Black Histic (A3)	A Redox Dark Surface (F6)	N Alaska Redox with 2.5Y Hue				
Hydrogen Sulfide (A4) (within 12"of mineral	N Depleted Dark Surface (F7)	- N AK Gleyed without Hue 5Y or				
surface; @ 5_" in this pit		Redder Underlying Layer.				
M Thick Dark Surface (A12)	<u>M</u> Redox Depressions (F8)	\underline{N} α, α -dipyridyl positive (see pg. 91)				
Alaska Gleyed (A13)	Red Parent Material (F21)	Dther (Low organic matter, low iron, hig pH, recently developed., see p.91 of				
$\frac{1}{100}$ Alaska Redox (A14)	Very Shallow Dark Surface (I					
Alaska Gleyed Pores (A15)	³ One indicator of hydrophytic vege	tation, one primary indicator of wetland hydrology, and an st be present unless disturbed or problematic.				
	⁴ Give details of color change in Re	marks.				
Restrictive Layer (if present)	Drainage Class: PD	and the second se				
Туре: ЛОЛС	Soil Map Unit Name:	Hydric Soil Present? Yes No				
Depth (inches): N/H		The second				
Comments:						
1. 2		and the second sec				
3. Woold meet AK Gleyal woot Hue	54 Underlying & dd -Po	s it problematic.				
HYDROLOGY	. 0 .					
Wetland Hydrology Indicators (check ones that app	ly, measure from soil surface):	Secondary Indicators (at least 2 are required)				
Primary Indicators (any one indicator is sufficient)		N Water-Stained Leaves (B9)				
	æ Soil Cracks (B6)	N Drainage Patterns (B10)				
High Water Table (A2) (w/in 12")	ation Visible on Aerial Imagery (B7)	N Oxid'd Rhizospheres on Living Roots (C3) (within 12")				
Saturation (A3) (w/in 12")	ely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")				
Water Marks (B1)	eposits (B15)	M Salt Deposits (C5)				
N Sediment Deposits (B2)	gen Sulfide Odor (C1)	N Stunted or Stressed Plants (D1)				
N Drift Deposits (B3)	ason Water Table (C2) (w/in 12"-24"	-1 Geomorphic Position (D2) - Depression				
minera	ıl, 12"-40" organic) (explain)	M Shallow Aquitard (D3)				
	(explain)	(w/in 24", can perch H ₂ O w/in 12") Microtopographic Relief (D4) (caused by water)				
Iron Deposits (B5)		V FAC Neutral Test (D5)				
Field Observations (in. from ground surface):						
Surface Water Present? Yes X No	Depth of water (in.)					
Water Table Present? Yes X No	Depth to water (in.) / 0 //					
Seeping in at that	depth but not yet filled ?:					
Saturation Present? Yes X No	Depth to sat. (in.)	Wetland Hydrology Present? Yes X No				
(includes capillary fringe)	Epi Endo Unknown					
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous inspections), if available:				
Remarks:	1 1					
Hous in low spots. Iron she	en on surface water 13	taining on Jeg,				
1100 1 1 1 1 1 1 1 1 1 1		0				

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR 2021

PHOTO REPOR	RT		_	Marshall Airport an	d 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

Direction: NA

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

WETLAND DETERMINATION DATA FORM -	- Alaska Region
roject: Marshall Airport Borough/City: Kusihal	k CA Date: 9/11/2022
pplicant/Owner:_ADoT	Sampling Point #: 502.
nvestigator(s): ZH / 13C Firm: H	HDR Alaska, Inc.
at. (dec. °) 61.864187 Long. 1/02.017122 ± 'NAD 83 Recorded of	on GPS?: X Marked on map? X Field Map #:
ubregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Bermin Slope (%): _2 Aspect: W
ocal relief: Shape across slope: linear / convex/ concave Shape up/downslope: linear/	
hoto nos./descriptions: NESW 250, Camera#:	Veg Type (Viereck Level 4 or other): TTC Z
re climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wetter HGM type: N/A
re Vegetation \mathcal{N}_{+} , Soil \mathcal{N}_{+} , or Hydrology \mathcal{N}_{+} significantly disturbed? Are "Normal Circu	
re Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	es 🚹 No 🔀 If needed, explain answers here.
UMMARY OF FINDINGS	and the star will be very the set of the set of
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	
Hydric Soil Present? Yes No X within a wetland?	
Wetland Hydrology Present? Yes <u>No </u>	Remarks (e.g., marginal?):
EGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Jone 5.	Number of Dominant Species That are OBL, FACW, or FAC:5 (A)
2. 6.	Total Number of Dominant
7	Species Across All Strata: 51 (B)
88	
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cover:	The second s
Sapling/Shrub Stratum (woody plants < 3" dbh)	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Pop. Ere. 3 FACU 7. Pop. bal. 3 FACU	OBL species X1=
2. Pic. slav 1 FACU 8. Sal, pyl. 10 Y FACH	FACW species _25 X2= 56
Vac. uli. 10 Y FAC 9. Bet. sla. 5 FAC	FAC species 68 X3= 204
Spirster 5 _ FACU10.	FACU species 15 X4= 60
Rho, tim, 15 Y FACW 11	UPL + NL species X5= 3-7
Bet. nan, 3 FAC 12	Column Totals: 111 (A) 317 (B)
Total Sapling/Shrub Cover: 55	
50% of total cover: 27.5 20% of total cover: //	Prevalence Index = $B/A = 2.36$
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
Equi arv. 25 Y FAC 12	Hydrophytic Vegetation Indicators:
B. En. ang. 3 OBL 14.	Dominance Test is >50%
Charans. 3 FACH 15.	Prevalence Index is ≤3.0
. <u>Cal.can. 10</u>	Morphological Adaptations ¹ (Provide supporting
5 17 17	data in Remarks or on a separate sheet)
10	Problematic Hydrophytic Vegetation ¹ (Explain)
20	
0 21	¹ Indicators of hydric soil and wetland hydrology must
1 22 22	be present unless disturbed or problematic.
Total Herb Cover: <u>56</u>	
50% of total cover: <u>28</u> 20% of total cover: <u>11.2</u>	Hydrophytic
Circular 1/10-ac plot or other plot dimension: <u>l0x / b</u> % of bare ground:	Vegetation Yes No Present? No
6 Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	and the second sec
erm along South end of run way 25 higher than 5	w/ ounding,
and source end of hell well and hell hour ?	Alaska Version 2.0 Modified by HDR 2021

SOIL	main and the		- marine	Selling.		Sampling Point #: 502	
Profile Description: (Describe to the depth need	led to document the indi	cator or confirm	the abse	nce of indicat	ors)	and the second s	
Depth Horizon <u>Soil Matrix</u>	Redox	Features	xe :		a,a dip.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
(in.) (opt.) Color (moist) %	Color (moist)	<u>% Type¹</u>	Loc ²	Texture	(pos/	Remarks	
0-2 Oi	14-10 C	21	1	lagi i, ini	neg)	(or use comment number)	
2-12 3, 10424/3 100			-	Loam	N	EII	
12-20 B. 104RY/2 75	7.5YR 3/3 2	5 1	M	Loan	07	10	
	<u></u>		1.1		-10		
	netti a Sala Tara a	1394.			1	A CONTRACTOR OF A CONTRACTOR OFTA CONTRACTOR O	
The second se	1.234	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	· · · · · · · · · · · · · · · · · · ·	mar with			
	Carlo State		100				
¹ Type: C = Concentration, D = Depletion, RM = Re	educed Matrix CS=Coa	ted Sand Grain		n: Pl = Pore		- Poot Channel M - Matri	
Hydric Soil Indicators (check ones that apply, m				and the second second second	and a second second second	- Root Channel, M - Mathx	
Standard Indicators:	Indicators for Pi				•		
V Histosol or Histel (A1)	Charles and the second s	elow Dark Surf		and the second second	Alaska C	olor Change 4 (TA 4)	
Histic Epipedon (A2) (8-16" organics, sat'd,			ace (ATT)	10		olor Change ⁴ (TA4)	
underlain by mineral soil with chroma ≤2)	Depleted M	latrix (F3)		+	_ Alaska Al	pine Swales (TA5)	
Black Histic (A3)	Redox Dark	Surface (F6)		+	_ Alaska Re	edox with 2.5Y Hue	
Hydrogen Sulfide (A4) (within 12"of mineral	Depleted D	ark Surface (F	7)			d without Hue 5Y or	
surface; @" in this pit				150		er Underlying Layer	
Thick Dark Surface (A12)		ressions (F8)		1		dyl positive (see pg. 91)	
Alaska Gleyed (A13)	Red Parent	Material (F21)		+	_ Other (Lov pH, rece	w organic matter, low iron, high ently developed., see p.91 of	
Alaska Redox (A14)	Very Shallo	w Dark Surface	e (F22)		Supplem	nent; explain in Remarks)	
Alaska Gleyed Pores (A15)	³ One indicator of	hydrophytic ve	getation,	one primary in	dicatorofw	etland hydrology, and an	
ing and in the second	appropriate lands ⁴ Give details of co	scape position	must be p Remarks	resent unless	disturbedor	problematic.	
Restrictive Layer (if present)	Drainage Class	-	Remarks.				
Type: NW	Soil Map Unit Nar	10 0	Hvd	ric Soil Pres	ent?	Yes No X	
Depth (inches): N/A							
Comments:					1 100	No. Contraction of the second se	
1.				1 38			
2. Al admin I. D. Graphing	fic indicators +	- and - and	1	- Lou Dais	0 020	la la ser	
	UT I Marcarors	not appro	ofuriar	e londsca	gar porse	tion = berm,	
IYDROLOGY					. ki	A CONTRACTOR	
Wetland Hydrology Indicators (check ones that a		il surface):				2 are required)	
Primary Indicators (any one indicator is sufficient				Water-Stained		9)	
	rface Soil Cracks (B6)			Drainage Patte	- Constant Constant		
	indation Visible on Aeria	•				iving Roots (C3) (within 12")	
Saturation (A3) (w/in 12")	arsely Vegetated Conca	ve Surface (B8		Presence of R (pos. α,α or so	educed fror bil color chang	n (C4) ge w/in 12")	
	rl Deposits (B15)		NS	Salt Deposits (and the second	
Sediment Deposits (B2)	drogen Sulfide Odor (C1)	NS	Stunted or Stre	essed Plant	s (D1)	
N Drift Deposits (B3)	-Season Water Table (0	C2) (w/in 12"-24"					
	neral, 12"-40" organic)			Shallow Aquita		1010	
	ner (explain)			(w/in 24", can p		n 12") 04) (caused by water)	
Iron Deposits (B5)				AC Neutral Te	÷	r4) (caused by water)	
Field Observations (in. from ground surface):			77	noneutiai It	551 (00)		
Surface Water Present? Yes No	Depth of water (in	.)					
Water Table Present? Yes No X							
	at depth but not yet fille						
			141-11	and block of		· · · ·	
Saturation Present? Yes No (includes capillary fringe)	Depth to sat. (in.) Epi Endo Un		weta	and Hydrolog	y Present?	Yes No X	
Describe Recorded Data (stream gauge, monitorin			ons) if ave	ilable:	1		
	a new, a sharp horos, pie						
Remarks:	1					and the second second	
thefile moist but not saturate	· l					ALL STREET	
and the second se				and the second	- Children	and the second s	

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation

Direction: W

PHOTO REPOR	۲T			Marshall Airport a	nd 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): <u>2H/BC</u> Firm: H	IDR Alaska, Inc.
Lat. (dec. °) 61. 863950 Long. 162, 016920 ± ' NAD 83 Recorded of	on GPS?: 📈 Marked on map? 🔀 Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Walter Bottom Slope (%): 3 Aspect: N
Local relief: Shape across slope: linear/convex/concave Shape up/downslope: linear/ convex/concave Shape up/dow	convex/concave NWI classification: P553/Em13
Photo nos./descriptions: NESUS SULX7_ Camera #:	_ Veg Type (Viereck Level 4 or other): TC2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	_ If no, explain. Wetter HGM type: Slope
Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circu	Imstances" present? Yes X No
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	esNo X If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	a
Hydric Soil Present? Yes Yes No within a wetland?	
Wetland Hydrology Present? Yes Ves No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can	n total >100%. Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3″)	Dominance lest worksneet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
1. None5	That are OBL, FACW, or FAC:(A)
3 0	Total Number of Dominant Species Across All Strata:
4. 8.	(В)
the second s	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
<u>Sapling/Shrub Stratum (</u> woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 23 x1= 23
1. Bet. rah. 10 FAC 7	FACW species <u>55</u> X2= <u>//O</u>
3. Rho. tom. 20 Y EACN 9	FAC species 41 $x_3=/23$
4. Vac. 01, 15 Y FAC 10.	FACU species X4=
5. And. pol. 5 EASW11:	UPL + NL species X5=
6. Vac. oxy. 3 OBL 12	Column Totals: 119 (A) 25(0 (B)
Total Sapling/Shrub Cover: 60	
50% of total cover: 34 20% of total cover: 13.6	Prevalence Index = B/A = 2.15
Herb Stratum	
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Eri, Vag. 30 Y FALW 12.	Hydrophytic Vegetation Indicators:
3. Pelise 1 14	Dominance Test is >50%
4 Car. big FAC 15	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7 18 10	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19 9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 52	
50% of total cover: 20% of total cover:	Hydrophytic X
Circular 1/10-ac plot 🔟 or other plot dimension: % of bare ground:	Vegetation Yes No No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?
Remarks: Lichen = 15%	
Trunk v 10 0	

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SOIL	and she	and and	estere in the se	3.48	ALL STOLE	Serve The	the start		Sampling Point#: SOH		
Profile Description: (I	Describe to the de	epth needed	to document the	indicate	ororconfirm	n the abse	hce of indicat	ors)	14 - P - P (A)		
Depth Horizon	Soil Matrix	<u> </u>	Re	Redox Features					α,α dip.		
(in.) (opt.) 0-5 0 (<u>Color (moist)</u>	<u>%</u>	<u>Color (moist)</u> ∼	<u>%</u> -	Type ¹	Loc ²	 ~	(pos/ neg)	<u>(or use comment number)</u>		
5-23 Oe	31	-	4			1		J.			
	alex and				_		1000 (p. 1)				
	10 - 10 J.	= =	1. (-J	_			1		a the standard		
	an it. Barganar an	2 2			/						
¹ Type: C = Concentrat	tion, D = Depletion	n, RM = Redu	uced Matrix, CS=	Coated	Sand Grai	ns ² Locatio	on: PL = Pore	Lining, RC	= Root Channel, M = Matri		
Hydric Soil Indicators	(check ones tha	t apply, mea	sure from top of	minera	l layers ur	less othe	erwise noted)	- 1 S & S	Instant South Street		
Standard Indicators:	and the second	1.171.114	Indicators fo	or Probl	ematic Hy	dric Soils	3:		ALL MOUNT AND		
Histosol or Histel			Deplete	ed Belov	w Dark Sur	face (A11)) <u>N</u>	_ Alaska C	olor Change ⁴ (TA4)		
and the second	A2) (8-16" organic neral soil with chron		. 1	ed Matri			N		pine Swales (TA5)		
N Black Histic (A3)			_/V_Redox	Dark Su	rface (F6)		10		edox with 2.5Y Hue		
Hydrogen Sulfide surface; @	" in this pit	fmineral	1	A.A.	Surface (F	7)	N	Redde	d without Hue 5Y or or Underlying Layer		
Thick Dark Surfac	ce (A12)	1	_/V_Redox	Depress	sions (F8)		N		dyl positive (see pg. 91)		
Alaska Gleyed (A	13)		M Red Pa	rent Ma	terial (F21)		A	Other (Lo	w organic matter, low iron, hig		
Alaska Redox (A1	14)		N Very St	hallow D	ark Surface	e (F22)		Supplen	ently developed., see p.91 of nent; explain in Remarks)		
N Alaska Gleyed Po	ores (A15)	6	³ One indicato appropriate la ⁴ Give details	andscap	be position	must be p	one primary in resent unless	dicator of w disturbed o	etland hydrology, and an r problematic.		
Restrictive Layer (if pres	sent)		Drainage Cla								
Type: NJ Depth (inches):			Soil Map Unit	v .	Sel .	Hyd	ric Soil Pres	ent?	Yes No		
Comments:					-			47.11			
1. 2. 3.	t.	1.									
YDROLOGY		ela Meria	a P			1	E-MARTINE				
Wetland Hydrology Inc			ly, measure from	n soil s	urface):	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			2 are required)		
Primary Indicators (an				s).		. /	Water-Stained	and the second second	9)		
Surface Water (A1)		and the second se	ce Soil Cracks (Bl		(07)	Prainage Patterns (B10)					
1			ation Visible on A				Presence of R		iving Roots (C3) (within 12"		
Saturation (A3) (w/i	n 12")	1	ely Vegetated Co	oncave S	Surface (B8		(pos. a,a or so				
	Water Marks (B1) Marl Deposits (B15)					A) Salt Deposits (C5)					
<u>∧</u> Sediment Deposits	(B2)	T. V	gen Sulfide Odor	and the second sec			Stunted or Str				
Drift Deposits (B3)		minera	eason Water Tab al, 12"-40" organic)	ole (C2) ((w/in 12"-24'		Geomorphic P Shallow Aquita				
Algal Mat or Crust (B)	D4)	<u>_</u> Other	(explain)				(w/in 24", can p Microtopograp		n 12") העזעה 04) (caused by water)		
	and the second second	- and	Mar 1			YF	AC Neutral Te	est (D5)			
Field Observations (in. fr		ce):	100-100 (MAR)		11	1	12010	1			
Surface Water Present?	Yes X	No	Depth of wate	er (in.) _	1						
Water Table Present?	Yes X	No	Depth to wate	er (in.) _	5"						
	Seepi	ng in at that	depth but not yet	filled?:							

411

Depth to sat. (in.)

(includes capillary fringe)	T internation	Epi	Endo	Unknown	
Describe Recorded Data (stream	gauge, monitoring we	ell, aeria	l photos	, previous inspections), if available:

No

Yes X

Remarks:

RE

Some H20 in low areas.

Saturation Present?

Wetland Hydrology Present?

Yes No___

PHOTO REPOR	RT			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

Direction: NA

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: N

PHOTO REPOR	T	_		Marshall Airport a	nd 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 REPOR	RT			Marshall Airport a	nd 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: Kosilva	K CA Date: 9/11/2022
Applicant/Owner: AD6T	Sampling Point #: 507
	HDR Alaska, Inc.
Lat. (dec.") 61. 864666 Long. 162.021331 + NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	
Photo nos./descriptions: NE3W 50,1 X Z Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation 2, Soil 2, or Hydrology significantly disturbed? Are "Normal Circ	
Are Vegetation M, Soil M, or Hydrology M naturally problematic? In Dry Season? Y	es No Kineeded, explain answers here.
SUMMARY OF FINDINGS	periodel structures and an and
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled an	ea ·
Hydric Soil Present? Yes No within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	in total >100%.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Nme	Number of Dominant Species That are OBL, FACW, or FAC: (A)
26	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 2 X1= 2
1. Bet. nan. 10 Y FAC 7. HIM. Sin. 1 FAC	FACW species 25 $x_2 = 50$
2. Sal. p. I. 10 9 FACW 8	FAC species 46 $x_3 = 138$
3. R.h. form. T FACW 9.	FACU species 8 X4= 32
4. Vac. uli, <u>5</u> <u>FAC</u> 10	
6. Sal. bar. 5 FAC 12.	UPL + NL species O X5= O
Total Sapling/Shrub Cover: 39	Column Totals: <u>81</u> (A) <u>722</u> (B)
50% of total cover: 20% of total cover: 7,8	274
Herb Stratum	Prevalence Index = B/A = <u>2.74</u>
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	and the second
1. Des. cal, 25 Y FAC 12.	Lindowski die Maasdadies Indiander
2. Chai ang, 7 EACU 13.	Hydrophytic Vegetation Indicators:
3. Jun. cas. 5 FACW 14	Dominance Test is >50% Prevalence Index is ≤3.0
4. Ora. sp. 1 15 15	
5. <u>Eri, Vaz.</u> <u>3</u> <u>FACW</u> 16 6. <u>Eri, ang.</u> <u>1</u> <u>OBL</u> 17	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. Equ. flu, 1 OBL 18.	
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: <u>43</u>	and the second se
50% of total cover: <u>21.5</u> 20% of total cover: <u>8,6</u>	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 5×5% of bare ground:	Vegetation Yes No No No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	
~ 5' from toe of slope, ~ 4' higher than toe. Very close	I U I I
15 from toe of slope, 24 higher than toe. Very close	to wetland boundary.

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SOIL	and the second second	Sampling Point #: 507
Profile Description: (Describe to the depth need	led to document the indicator or confirm the	he absence of indicators)
Depth Horizon <u>Soil Matrix</u>	Redox Features	α dip.
(in.) (opt.) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture (pos/ Remarks
2-2 Fill 1042 2/2 100		(or use comment number
2-4 1 10 4R 5/4 100	The second secon	GRID N
1-20 J 10 4R 5/4 85		- CRID D
	The second secon	
54 2/1 15		
and the second s	the second s	
<u>X</u>	and the second second second	The state of the s
¹ Type: C = Concentration, D = Depletion, RM = R	educed Matrix, CS=Coated Sand Grains	² Location: PL = Pore Lining, RC = Root Channel, M = Mat
Hydric Soil Indicators (check ones that apply, n		
Standard Indicators:	Indicators for Problematic Hydr	The second s
<u>∧</u> / Histosol or Histel (A1)	N Depleted Below Dark Surfac	A /
Histic Epipedon (A2) (8-16" organics, sat'd,	1	
underlain by mineral soil with chroma ≤2)	Depleted Matrix (F3)	Alaska Alpine Swales (TA5)
Black Histic (A3)	Redox Dark Surface (F6)	Alaska Redox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of mineral	Depleted Dark Surface (F7)	AK Gleyed without Hue 5Y or
surface; @" in this pit		Redder Underlying Layer
Thick Dark Surface (A12)	Redox Depressions (F8)	α,α-dipyridyl positive (see pg. 91)
Alaska Gleyed (A13)	Red Parent Material (F21)	Other (Low organic matter, low iron, h
Alaska Redox (A14)	Very Shallow Dark Surface ((F22) pH, recently developed., see p.91 of Supplement; explain in Remarks)
Alaska Gleyed Pores (A15)	appropriate landscape position mi	etation, one primary indicator of wetland hydrology, and an ust be present unless disturbed or problematic.
	⁴ Give details of color change in Re	emarks.
Restrictive Layer (if present)	Drainage Class: MWD	
Type: None	Soil Map Unit Name:	Hydric Soil Present? Yes No X
Depth (inches): N/A		
3. This trophic, Gravelly loam fill YDROLOGY Wetland Hydrology Indicators (check ones that a		Secondary Indicators (at least 2 are required)
Primary Indicators (any one indicator is sufficient	The same proves and compared	Water-Stained Leaves (B9)
	rface Soil Cracks (B6)	Drainage Patterns (B10)
High Water Table (A2) (w/in 12")	Indation Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (within 12
Saturation (A3) (w/in 12")	arsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
Water Marks (B1) Ma	rl Deposits (B15)	Salt Deposits (C5)
Sediment Deposits (B2)	drogen Sulfide Odor (C1)	Stunted or Stressed Plants (D1)
	-Season Water Table (C2) (w/in 12"-24"	Geomorphic Position (D2)
	neral, 12"-40" organic)	Shallow Aquitard (D3)
Algal Mat or Crust (B4)Oth	ner (explain)	(w/in 24", can perch H ₂ O w/in 12")
Iron Deposits (B5)		Microtopographic Relief (D4) (caused by water)
		FAC Neutral Test (D5)
the second se		
Field Observations (in. from ground surface):	c V	
	Depth of water (in.)	1
Surface Water Present? Yes <u>X</u> No <u>X</u>	Depth of water (in.) <u>l</u>	
Surface Water Present? Yes No Water Table Present? Yes No	Depth to water (in.)	
Water Table Present? Yes X No Seeping in at th	Depth to water (in.) nat depth but not yet filled ?:	Wetland Hydrology Process? Yes K. No.
Surface Water Present? Yes No Water Table Present? Yes No Seeping in at the Saturation Present? Yes No	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.)	Wetland Hydrology Present? Yes 🗶 No
Surface Water Present? Yes <u>Ves</u> No Water Table Present? Yes <u>Ves</u> No Seeping in at the Saturation Present? Yes <u>Ves</u> No includes capillary fringe)	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown	
Surface Water Present? Yes <u>/</u> No Water Table Present? Yes No Seeping in at th	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown	
Surface Water Present? Yes <u>No</u> Water Table Present? Yes <u>No</u> Seeping in at th Saturation Present? Yes <u>No</u> includes capillary fringe) Describe Recorded Data (stream gauge, monitorin	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown g well, aerial photos, previous inspection:	
Surface Water Present? Yes No Water Table Present? Yes No Seeping in at th Saturation Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitorin	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown g well, aerial photos, previous inspection:	s), if available:
Surface Water Present? Yes <u>No</u> Water Table Present? Yes <u>No</u> Seeping in at the Saturation Present? Yes <u>No</u> includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	Depth to water (in.) nat depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown g well, aerial photos, previous inspection:	A DESCRIPTION OF THE REAL PROPERTY OF THE

PHOTO REPOR	кт			Marshall Airport a	nd 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

Direction: NA

IA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Direction: S

PHOTO REPOR	RT			Marshall Airport a	nd 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: Kusilva	
Applicant/Owner: APOT	Sampling Point #: 50.9
Investigator(s): <u>7 H /BL</u> Firm:	HDR Alaska, Inc.
Lat. (dec. °) 61. 86 4 8.38 Long. 162. 021 714 ± ' NAD 83 Recorded	on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	
Local relief: Shape across slope: (linear / convex / concave Shape up/downslope: linear /	
	Veg Type (Viereck Level 4 or other): DC2a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circ	
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> naturally problematic? In Dry Season? Y	
SUMMARY OF FINDINGS	house of the total border to the total state of
Hydrophytic Vegetation Present? Yes No Is the second and	
Hydric Soil Present? Yes No Is the sampled an within a wetland	
Wetland Hydrology Present? Yes 🖌 No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	an total >100%.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1.Non. 55	That are OBL, FACW, or FAC:(A)
2 6 6	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover:	Percent of Dominant Species
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC:
Sapling/Shrub Stratum (woody plants < 3" dbh)	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
1. Bot. nan. 25 9. FAC 7.	OBL species X1=
2. Vac. uli, 15 9 FAC 8.	FACW species X2= 12.0
3. Rho, tom, 10 FACW 9.	FAC species X3=
4. And pil. 5 FACW 10	FACU species X4=
5. Vac. oxy OUL 11	UPL + NL species X5=
6 <u>12</u>	Column Totals: <u>113 (A)</u> <u>253 (B)</u>
Total Sapling/Shrub Cover: 56	
50% of total cover: 28 20% of total cover:	Prevalence Index = B/A = 2.24
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1.Err.JAS. 45 4 FACW 12.	
2. En ans 7 OBL 13.	Hydrophytic Vegetation Indicators:
3. Luziwah. 5 0BL 14.	Dominance Test is >50%
4 15	_X_ Prevalence Index is ≤3.0
5 16 16	Morphological Adaptations ¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19	
9 20	1
10 21	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 57	
50% of total cover: 28.5 20% of total cover://.4	Hudenshifts
Circular 1/10-ac plot or other plot dimension: <u>10×10</u> % of bare ground:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks:	· (2)
	5

Profile L	Description:	(Describe to the de	pth needed	to document the	indicato	or or confirm	the abser	nce of indicate	ors)	
Depth	Horizon	Soil Matrix		Re	dox Fea	atures	1.15 M		a,a dip.	The rest is
<u>(in.)</u>	<u>(opt.)</u>	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	(pos/ neg)	<u>(or use comment number</u>
)-3	. <u>Oi</u>	-	7	~	-	-7	-		NT	tor use comment number
-20	De	-	-	-		1.0	L	. L	V	The second second
								al Part		
				Martin Martin	1				Angel Here	The second
	S. 1.9.				-					
	A sulat			X.	- 12-		1. S.			Sector Providence
_		X	100			transition of		11		and the second
	Contraction of the			and the second second		- And - Hand	Hit and	Va		The Local August
Type: C	C = Concentra	tion, D = Depletion	, RM = Redu	ced Matrix, CS=0	Coated	Sand Grain	s ² Locatio	n: PL = Pore	Lining, RC =	Root Channel, M = Matr
		(check ones that								not on
	d Indicators:	1. A.	X	Indicators fo						Section 2
K_ His	stosol or Histel	(A1)				w Dark Surfa		N	Alaska Co	lor Change ⁴ (TA4)
M_ His		(A2) (8-16" organics		Deplete				1		oine Swales (TA5)
DI		ineral soil with chrom	a ≤2)					1 1 1 1 1		
	ack Histic (A3)	- (A 4) (within 107-5		Redox I	Dark Su	rface (F6)		+		dox with 2.5Y Hue
riyi	rface; @	e (A4) (within 12"of _" in this pit	mineral	Deplete	ed Dark	Surface (F7)	-	_AK Gleyed	d without Hue 5Y or r Underlying Layer
0.0	ick Dark Surfa			Redox	Depress	sions (F8)		E		lyl positive (see pg. 91)
Ala	aska Gleyed (A	13)			1	terial (F21)				v organic matter, low iron, hi
	1						(500)		pH, recei	ntly developed., see p.91 of
1.19	aska Redox (A					ark Surface				ent; explain in Remarks)
Ala	aska Gleyed P	ores (A15)		"One indicato appropriate la	rofhyd	rophytic veg	getation, o	ne primary inc	dicator of we	tland hydrology, and an
				⁴ Give details	of color	change in R	Remarks.	esent unless (distuibed of	problematic.
Restrictiv	ve Layer (if pre	esent)		Drainage Clas	ss:	PD	8			10
Type:	Frost.		<u></u>	Soil Map Unit	Name:		Hydr	ic Soil Prese	ent?)	res No
Depth	(inches):	20"	and the second second	38 20 2						
Commen	nts:	- 27	1. S. 1.	1000	-	- Marine I		11:	P. C.	
1. 2.				100					1. 1. 1.	
3.	pres Para		They want					1.101.1		
TROL	OGY							1111		
		dicators (check of	nes that app	ly, measure from	n soil s	urface):	Secor	ndary Indicato	ors (at least 2	2 are required)
		ny one indicator is					. /	ater-Stained		
N Surfa	ace Water (A1)	N Surfac	ce Soil Cracks (B6	5)			rainage Patte		
High	Water Table	(A2) (w/in 12")	Inund	ation Visible on A	erialIm	agery (B7)	1 27			ving Roots (C3) (within 12'
Y Satu	ration (A3) (w	/in 12")	Spars	ely Vegetated Co	ncave §	Surface (B8)	NUTP	resence of Re	educed Iron	(C4)
1	er Marks (B1)	·····		eposits (B15)	nouro	5411400 (50)	N	pos. α,α or so		e w/in 12")
T	iment Deposit	s (B2)	20	gen Sulfide Odor	(C1)		1.1	alt Deposits (tunted or Stre	The Property server	(D1)
Transie				eason Water Tab		w/in 12" 24"	11	eomorphic Po		(01)
Drift	Deposits (B3)		minera	al, 12"-40" organic)	10 (02) ((w/111 1224		hallow Aquita		t
-	Mat or Crust	(B4)	- Other	(explain)				w/in 24", can pe		12")
Alga	Deposits (B5)									4) (caused by water) - how
	Depusits (DO)	199	·			and the	F/	AC Neutral Te	est (D5)	1
Iron I		from around ourfor	11		100	in the		1.1.1.2.1	1 1 1 1 1 1 1	1
Iron I	servations (in.		No X	Depth of wate						
Iron I field Obs Surface V	servations (in. Water Present	? Yes			r (in.)	10	1			1. 1. 1. F
Field Obs Surface V	servations (in.	? Yes Yes	No	Depth to wate	Alt She					A CONTRACT OF
Field Obs Surface V	servations (in. Water Present	? Yes Yes	No	depth but not yet	filled?:	4				
Iron I Field Obs Surface V Vater Ta Saturatio	servations (in. Water Present ble Present? n Present?	? Yes Yes X Seepin Yes X	No		filled?:	4	Wetla	nd Hydrology	Present?	Yes X No
Iron I Field Obs Surface V Vater Ta Saturatio ncludes	servations (in. Water Present ble Present? on Present? capillary fring	? Yes Yes X Seepin Yes X	No ng in at that No	depth but not yet Depth to sat. (Epi Endo.	filled?: (in.) Unkno				/ Present?	Yes
Iron I Field Obs Surface V Vater Ta Saturatio ncludes	servations (in. Water Present ble Present? on Present? capillary fring	? Yes Yes X Seepin Yes X	No ng in at that No	depth but not yet Depth to sat. (Epi Endo.	filled?: (in.) Unkno				y Present?	Yes <u> </u>
Iron I field Obs Surface V Vater Ta saturatio ncludes	servations (in. Water Present Ible Present? In Present? capillary fring Recorded Dat	? Yes Yes X Seepin Yes X	No ng in at that No	depth but not yet Depth to sat. (Epi Endo.	filled?: (in.) Unkno				y Present?	Yes <u>X</u> No

a state

PHOTO REPOR	кт		_	Marshall Airport a	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

Direction: NA

NA Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: S

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: MARSHAIL AIRPORT Borough/City: Kosilval	the constant of the state of th
Applicant/Owner: APOT	with the second s
111 10 3	Sampling Point#: <u>Sion</u>
Lat. (dec.°) 61.86562.7 Long. 162.034165 ± NAD 83 Recorded of	
Subregion (circle one): SE Southcentral (Western) Aleutian Interior Northern Landfo	
Local relief: Shape across slope: (linear/ convex / concave Shape up/downslope: (linear/	
	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M_, Soil M, or Hydrology M significantly disturbed? Are "Normal Circu	
Are Vegetation N, Soil N, or Hydrology // naturally problematic? In Dry Season? Ye	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No	
Is the sampled are	
Wetland Hydrology Present? Yes No within a wetland?	
	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can	n total >100%. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	Bonnance reat workaneet.
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC:5 (A)
1. <u>Alanl5</u>	That are OBL, FACW, or FAC:(A)
2 0	Total Number of Dominant Species Across All Strata:
4	
	Description in the second second
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 3 X1= 3
1. Bet. nan. 25 Y FAC 7. Emp. nig. 15 Y FAC	FACW species 83 X2=166
2. Vac. VIII 15 Y CAC 8. And pol. 3 FACH	EL LO
3. Pop. bal. 5 FACU 9. Sal. p.J. 5 FACW 4. Rho Ham 15 Y FACW 10	
6. Sal. arb, 5 FACW 12.	UPL + NL species X5=
Total Sapling/Shrub Cover: 89	Column Totals: $\underline{197}(A)$ $\underline{357}(B)$
50% of total cover: <u>44.5</u> 20% of total cover: <u>17.8</u>	0.42
Herb Stratum	Prevalence Index = $B/A = 2.95$
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	the second s
1. Er. Vag. 55 Y FACW 12.	
2. Fri. away 3. OBL 13.	Hydrophytic Vegetation Indicators:
.3 14	Dominance Test is >50%
4 15	Prevalence Index is ≤3.0
5 16 16	Morphological Adaptations ¹ (Provide supporting
6 17 17	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19	
9 20	¹ Indicators of hydric soil and wetland hydrology must
10 21	be present unless disturbed or problematic.
Total Herb Cover: 58	
50% of total cover:29 20% of total cover:1.6	Hydronhydia
Circular 1/10-ac plot or other plot dimension: 20 X20 % of bare ground:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks:	

and an end of the second	on: (Describe to the de	. and				i the abser	ice of indicato	ors)	
Depth Horizon	n <u>Soil Matrix</u>		R	edox Fea	tures			a,a dip.	1
(in.) (opt.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	(pos/ neg)	<u>Remarks</u> (or use comment number
1-2 Oc	int -	-	-	-	-	e .		negr ,	tor use comment number
-4 B	2,544/1	100		-	-	Ser	SALO	NT	The share of the second
-20 De	~	-		~	1910		Talaster	101	
			1949	Sill the	12.00	1000	1. 1. 4.	A STATE	CONTRACT OF CONTRACT
						11 			THE PARTY OF
inter .	w W		X			(aligentia)	1.00	· · ·	State of the second
	X		Due Shutan		North Contract		12	A.	Marine
-		X	Sec. Starson	and a second	-	- Charles - La	A		M
Type: C = Conc		n RM = Redu	ced Matrix CS=	Coated	Sand Grain		n: DL = Dom		Root Channel, M = Matr
	ators (check ones that								Root Channel, M = Matr
tandard Indicat		it apply, mea							there was a start to
V Histosol or H	Statistics and statistics and statistics	X	Indicators fo		v Dark Surf		2410		4
1	don (A2) (8-16" organic	e sat'd				ace (A11)	10		lor Change ⁴ (TA4)
	by mineral soil with chron		Deplet	ed Matrix	(F3)		N	_ Alaska Alp	ine Swales (TA5)
N Black Histic	(A3)	NES	_N Redox	Dark Su	face (F6)		N	Alaska Re	dox with 2.5Y Hue
N Hydrogen S	ulfide (A4) (within 12"o	fmineral		ed Dark	Surface (Fi	7)	N	AK Gleyed	without Hue 5Y or
1	" in this pit	A cal					, 1	Redder	Underlying Layer
/ Thick Dark S	Surface (A12)		Redox	Depress	ions (F8)		P	α, α -dipyrid	lyl positive (see pg. 91)
N Alaska Gley	ed (A13)		N_Red Pa	arent Mat	terial (F21)		N	Other (Low	organic matter, low iron, hi
N Alaska Red	ox (A14)		N Very S	hallow Da	ark Surface	(F22)		Suppleme	ntly developed., see p.91 of ent; explain in Remarks)
N Alaska Gley	ed Pores (A15)						ne nrimary inc		tland hydrology, and an
Philip Phil			appropriate l ⁴ Give details	landscap	e position	nust be pr	esent unless o	disturbed or	problematic.
estrictive Layer (if present)		Drainage Cla	ass: VP	D.		A DAY OF THE		
Type:	Ime		CallMan Lini		-				X
			Soil Map Uni	it Name:		Hydr	ic Soil Prese	ent? Y	es No
Depth (inches	s): N/A C		Soli Map Uni	it Name:		Hydr	ic Soil Prese	ent? Y	'es No
Depth (inches Comments:	s): <u>N/A C</u>		Soli Map Uni	it Name:	ibe to	Hydr	ic Soil Prese	ent? Y	'es No
comments:	s): <u>N/A C</u>		Soli Map Uni	it Name:	6' 100'	Hydr	ic Soil Prese	ent? Y	'es <u> </u>
comments:	s): <u>N/A Cr</u>		Soli Map Uni	it Name:	o vál	Hydr	ic Soil Prese	ent? Y	'es <u> </u>
comments:	s): <u>N/A C</u>		Soli Map Uni	It Name:	o' unit	Hydr	ic Soil Prese	ent? Y	'es <u> </u>
Comments:						,			
OMMENTS: DROLOGY Vetland Hydrolog	gy Indicators (check o				Irface):	Secor	ndary Indicato	ors (at least 2	2 are required)
OMMENTS: DROLOGY /etland Hydrolog rimary Indicators	gy Indicators (check o a (any one indicator is	sufficient)	ly, measure from	m soil su	urface):	Secon N W	ndary Indicato	ors (at least 2 Leaves (B9)	2 are required)
TOROLOGY	gy Indicators (check o (any one indicator is (A1)	sufficient)	ly, measure fro ce Soil Cracks (B	m soil su		Secon N W N D	ndary Indicato /ater-Stained rainage Patte	ors (at least 2 Leaves (B9) orms (B10)	2 are required)
Comments: (DROLOGY Vetland Hydrolog Inimary Indicators) Surface Water High Water Ta	gy Indicators (check o (any one indicator is (A1) able (A2) (w/in 12")	Sufficient)	rly, measure fro ce Soil Cracks (B ation Visible on A	m soil su 6) Aerial Ima	agery (B7)	Secon N W N D N O	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp	ors (at least 2 Leaves (B9) erns (B10) heres on Liv	<u>2 are required)</u>) /ing Roots (C3) (within 12'
TOROLOGY	gy Indicators (check o (any one indicator is (A1) able (A2) (w/in 12")	Sufficient)	ly, measure fro ce Soil Cracks (B	m soil su 6) Aerial Ima	agery (B7)	Secon N W N D N O NTP	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re	ors (at least 2 Leaves (B9) ems (B10) heres on Liv educed Iron	<u>2 are required)</u>) /ing Roots (C3) (within 12* (C4)
OROLOGY / TROLOGY / etiand Hydrolog rimary Indicators Surface Water / High Water Ta	gy Indicators (check o (any one indicator is af (A1) able (A2) (w/in 12") 3) (w/in 12")	Sufficient)	rly, measure fro ce Soil Cracks (B ation Visible on A	m soil su 6) Aerial Ima	agery (B7)	Secon NW ND NO NTP (ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp	ors (at least 2 Leaves (B9) ems (B10) heres on Liv educed Iron il color change	<u>2 are required)</u>) /ing Roots (C3) (within 12* (C4)
Comments: DROLOGY Vetland Hydrolog rimary Indicators Surface Wate High Water Ta Saturation (A)	gy Indicators (check o (any one indicator is er (A1) able (A2) (w/in 12") 3) (w/in 12") (B1)	sufficient) Surface Inund Spars Marl D	ily, measure fro ce Soil Cracks (B ation Visible on A ely Vegetated C	m soil su 16) Aerial Ima oncave S	agery (B7)	Secon NW ND ND NTP NS	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re pos. α,α or soi	ors (at least 2 Leaves (B9) erms (B10) heres on Liv educed Iron il color change C5)	2 are required)) //ing Roots (C3) (within 12' (C4) a w/in 12")
DROLOGY /DROLOGY /etland Hydrolog rimary Indicators 	gy Indicators (check o (any one indicator is an (A1) able (A2) (w/in 12") (W/in 12") (B1) posits (B2)	Sufficient)	ely, measure fro ce Soil Cracks (B ation Visible on A ely Vegetated C eposits (B15) gen Sulfide Odo eason Water Tal	m soil su 6) Aerial Ima oncave S or (C1) ble (C2) (c	agery (B7) Surface (B8	Secon N N N D N D N D N D N C S S	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re pos. α,α or soi alt Deposits (f	ers (at least 2 Leaves (B9) erms (B10) heres on Liv educed Iron il color change C5) essed Plants	2 are required)) ving Roots (C3) (within 12' (C4) a w/in 12")
Comments: (DROLOGY Vetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A Water Marks (Sediment Dep Drift Deposits	gy Indicators (check o (any one indicator is (A1) able (A2) (w/in 12") (W/in 12") (B1) posits (B2) (B3)	Sufficient)	ly, measure fro ce Soil Cracks (B ation Visible on A ely Vegetated C leposits (B15) gen Sulfide Odo eason Water Tal al, 12"-40" organic)	m soil su 6) Aerial Ima oncave S or (C1) ble (C2) (c	agery (B7) Surface (B8	Secon N N N N N N N N N N S S S S S S S	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re pos. α,α or soi alt Deposits (i tunted or Stre eomorphic Po hallow Aquita	ens (at least 2 Leaves (B9) ems (B10) heres on Live duced Iron il color change C5) essed Plants osition (D2) rd (D3)	2 are required) /ing Roots (C3) (within 12' (C4) a w/in 12") (D1)
Comments: (DROLOGY Vetland Hydrolog Inimary Indicators Surface Water High Water Ta Saturation (A Water Marks (Sediment Dep Drift Deposits Algal Mat or C	gy Indicators (check o (any one indicator is an (A1) able (A2) (w/in 12") (B1) posits (B2) (B3) crust (B4)	Sufficient)	ely, measure fro ce Soil Cracks (B ation Visible on A ely Vegetated C eposits (B15) gen Sulfide Odo eason Water Tal	m soil su 6) Aerial Ima oncave S or (C1) ble (C2) (c	agery (B7) Surface (B8	Secon N N D N N N N S S S S S S S S S S S S S	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re pos. α,α or soi alt Deposits (f tunted or Stre eomorphic Po hallow Aquita w/in 24", can pe	ers (at least 2 Leaves (B9) erns (B10) heres on Live educed Iron il color change C5) essed Plants osition (D2) rd (D3) erch H ₂ O w/in	2 are required) ving Roots (C3) (within 12' (C4) a win 12") (D1) 12")
OROLOGY /DROLOGY /etland Hydrolog rimary Indicators	gy Indicators (check o (any one indicator is an (A1) able (A2) (w/in 12") (B1) posits (B2) (B3) crust (B4)	Sufficient)	ly, measure fro ce Soil Cracks (B ation Visible on A ely Vegetated C leposits (B15) gen Sulfide Odo eason Water Tal al, 12"-40" organic)	m soil su 6) Aerial Ima oncave S or (C1) ble (C2) (c	agery (B7) Surface (B8		ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp presence of Re pos. α, α or soi alt Deposits ((tunted or Stre eomorphic Po hallow Aquita y/in 24", can pe icrotopograp	ens (at least 2 Leaves (B9) ems (B10) heres on Liv educed Iron il color change 25) essed Plants position (D2) rd (D3) erch H ₂ O w/in hic Relief (D4	<u>2 are required)</u> ving Roots (C3) (within 12' (C4) e win 12") (D1)
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PHOTO REPOR	RT		_	Marshall Airport a	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

Direction: NA

NA Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

Direction: W

WETLAND DETERMINATI	ON DATA FORM -	Alaska Region
Project: MARSHALL ATRPORT Boroug	h/City: <u>Kusilva</u>	
Applicant/Owner: <u>A[] 01</u>	£*	Sampling Point#: <u>\$//</u>
Investigator(s): 214 / BC	Firm: H	
Lat. (dec.°) <u>61, 865660</u> Long. <u>162,033672±</u> '		
Subregion (circle one): SE Southcentral Western Aleutian Inter		
Local relief: Shape across slope: linear/ convex / concave Shape u	p/downslope: linear/g	convex/concave NWI classification: PSSI 1Em 1C
Photo nos./descriptions: <u>NESW 2-501</u>		
Are climatic / hydrologic conditions on the site typical for this time of year	ar? Yes: No: 🔀	If no, explain.Wetter HGM type:
Are Vegetation $\underline{\mathcal{M}}$, Soil $\underline{\mathcal{M}}$, or Hydrology $\underline{\mathcal{M}}$ significantly disturbe	d? Are "Normal Circu	Imstances" present? Yes 📐 No
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic	? In Dry Season? Ye	es No If needed, explain answers here.
SUMMARY OF FINDINGS	>	
Hydrophytic Vegetation Present? Yes <u>No</u> No	is the sampled are	>
Hydric Soil Present? Yes 🗡 No	within a wetland?	
Wetland Hydrology Present? Yes 📈 No	*	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (no	t relative cover). % car	n total >100%.
		Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov	v.% Dom? Ind.	Number of Dominant Species
1. None 5		That are OBL, FACW, or FAC: (A)
2 6		Total Number of Dominant
3 7 7		Species Across All Strata: (B)
4 8 2		
Total Tree Cover:		Percent of Dominant Species
	6 	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cove	эг.	
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.	ov.% Dom? Ind.	Total % Cover of:Multiply by:
1. Salutarto 20 Y FACW 7. Aln. sin.	ov.% Dom? Ind.	OBL species X1=
2.5 15 FACW 8.		FACW species <u>(2</u> X2= <u>24</u>
3. Vac. uli 213 4 FAL 9.		FAC species <u>41</u> x3= <u>123</u>
4. Bet. nan. 10 FAL 10		FACU species X4=
5. And. pol. 7 FALM 11		UPL + NL species X5=
6. Kha. Jam. 5 FALW12	· ·	Column Totals: 118 (A) 262 (B)
Total Sapling/Shrub Cover: <u>79</u>	¢.	
50% of total cover: <u>39</u> 20% of total cove	ər: <u>15.6</u>	Prevalence Index = B/A =
Herb Stratum		8
	v.% Dom? Ind.	
1. Eri. Vag. 15 Y FACW12. 2. Car. anu: 15 T OBL 13.	<u> </u>	Hydrophytic Vegetation Indicators:
2. Car. anu: 15 4 OBL 13. 3. Cal. can. 10 4 FAC 14.		X Dominance Test is >50%
À 15 15		Prevalence Index is ≤3.0
5 16		Morphological Adaptations ¹ (Provide supporting
6 17		data in Remarks or on a separate sheet)
7 18		Problematic Hydrophytic Vegetation ¹ (Explain)
8 19		
9 20		¹ Indicators of hydric soil and wattend hydrole symmetry
10 21 11 22		¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 40		
	er: 8	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 15X15 % of b		Vegetation Yes <u>X</u> No
% Cover of Wetland Bryophytes% Total Cover of Bryo (where applicable)		Present?
Remarks:		

Alaska Version 2.0 Modified by HDR 2021

1000

Pepth Honzon ' <u>Soil Ma</u>	<u>atrix</u>	Re	edox Fea	tures			α,α dip.		
(in.) (opt.) Color (moist) <u>%</u>	Color (moist)	<u>%</u>	<u>Type¹</u>	Loc ²	_Texture	(nos/		emarks omment number)
-12 B N 471	- 85 -	754RJ/4	15	<u> </u>	n. De	Sala			
2-20 Oeb -		<u></u>	<u></u>	<u> </u>	PLIC				
							-	<u></u>	
	$\overline{w} = -$	×							
<u> </u>		-				. Z Q			
						d se t	-		
ype: C = Concentration, D = Deple								C = Root Cha	nnel, M = Matri
ydric Soil Indicators (checkones	that apply, me a						d):		
andard Indicators:	5	Indicators fo		-			1		
── Histosol or Histel (A1) ── Histic Epipedon (A2) (8-16" org	anice satid	A 1		/ Dark Sur	face (A1	1) 🔬	a l	ColorChange	. ,
underlain by mineral soil with d	hroma ≤2)	_/U Deplete	ed Matrix	:(F3)			Alaska /	Alpine Swale:	s (TA5)
🦳 Black Histic (Α3)		Redox	Dark Sur	face (F6)		1	🖳 Alaska I	Redox with 2.	5Y Hue
Hydrogen Sulfide (A4) (within ' surface; @' in this pit	12"of mineral	Deplete	ed Dark S	Surface (F	7)			ed without H	
U Thick Dark Surface (A12)		Bedox	Denree	ions (F8)			12 1	ler Underlyin: ridyl positive	
∠ Alaska Gleyed (A13)		.1	-		,		. 1		tter, low iron, hig
		al		enal (F21	•	_/	pH, red	cently develope	ed., see p.91 of
Alaska Redox (A14)		-		ark Surfac	• •	_		ement; explain i	•
🧾 Alaska Gleyed Pores (A15)		appropriate la ⁴Give details	andscap	e position	must be	present unles	s disturbed	wetland hydn or problemati	ology, and an c.
estrictive Layer (if present)		Drainage Cla	ss: M	2D				N/	
Type:	-	Soil Map Unit	Name:		Hy	/dric Soil Pre	esent?	Yes <u> </u>	No
omments:									
							·* .		
omments:]				
					 				
CONTROLOGY	ck ones that ap	ply, measure fror	n soil su	ırface):		condary Indic		et 2 are requir	red)
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicators)		ply, measure from	n soil su	ırface):		condary Indic _ Water-Stain	ators (at leas		ed)
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicators _ Surface Water (A1)	o <u>r is sufficient)</u> <u>_//</u> Surfa	ce Soil Cracks (Bl	6)		N		ators (at leas ed Leaves (E	39)	red)
DROLOGY etland Hydrology Indicators (cher mary Indicators (any one indicators)	o <u>r is sufficient)</u> <u>_//</u> Surfa		6)		N	Water-Stain Drainage Pa Oxid'd Rhizo	ators (at leas ed Leaves (E ittems (B10) ospheres on	39) Living Roots	
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicators _ Surface Water (A1)	o <u>r is sufficient)</u> <u>N</u> Suffa <u>N</u> Inunc	ce Soil Cracks (Bl	6) Venalima	igery (B7)	$\frac{N}{N}$	Water-Stain Drainage Pa Oxid'd Rhizo Presence of	ators (at leas ed Leaves (E ittems (B10) ispheres on Reduced Irc	39) Living Roots on (C4)	
DROLOGY etland Hydrology Indicators (cher mary Indicators (any one indicator _ Surface Water (A1) _ High Water Table (A2) (w/in 12")	o <u>r is sufficient)</u> <u>M</u> Surfa <u>M</u> Inunc <u>M</u> Spars	ce Soil Cracks (Be lation Visible on A	6) Venalima	igery (B7)	$\frac{N}{N}$	Water-Stain Drainage Pa Oxid'd Rhizo Presence of	ators (at leas ed Leaves (E ittems (B10) spheres on Reduced Iro soil color cha	39) Living Roots on (C4)	
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator _ Surface Water (A1) _ High Water Table (A2) (w/in 12") _ Saturation (A3) (w/in 12")	o <u>r is sufficient)</u> Surfa Inunc Spars Mart I Hydro	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor	6) Nenal Ima Dincave S r (C1)	igery (B7) urface (B		Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or	ators (at leas ed Leaves (E ittems (B10) spheres on Reduced In soil color cha s (C5)	39) Living Roots on (C4) nge w/in 12")	
DROLOGY etland Hydrology Indicators (cher imary Indicators(any one indicator Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1)	o <u>r is sufficient)</u> <u> </u>	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab	6) Venal Ima oncave S r (C1) ole (C2) (v	igery (B7) urface (B		Water-Stain Drainage Pa Oxid'd Rhizc Presence of (pos. o,o or Salt Deposit	ators (at leas ed Leaves (E ttems (B10) spheres on Reduced In soil color cha s (C5) tressed Plan	39) Living Roots on (C4) nge w/in 12") nts (D1)	
DROLOGY etland Hydrology Indicators (chea imary Indicators (any one indicato /_ Surface Water (A1) /_ High Water Table (A2) (w/in 12") /_ Saturation (A3) (w/in 12") /_ Water Marks (B1) /_ Sediment Deposits (B2) /_ Drift Deposits (B3)	or is sufficient) <u>M</u> Surfa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Marl I <u>M</u> Hydro <u>M</u> Dry-S miner	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic)	6) Venal Ima oncave S r (C1) ole (C2) (v	igery (B7) urface (B	$\frac{N}{N}$	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu	ators (at leas ed Leaves (E ttems (B10) spheres on Reduced Irr soil color cha s (C5) tressed Plan Position (D2 itard (D3)	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator / 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)	or is sufficient) <u>M</u> Surfa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Marl I <u>M</u> Hydro <u>M</u> Dry-S miner	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab	6) Venal Ima oncave S r (C1) ole (C2) (v	igery (B7) urface (B	$\frac{N}{N}$	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car	ators (at leased Leaves (E ed Leaves (E ttems (B10) spheres on Reduced Irr soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher mary Indicators (any one indicator 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)	or is sufficient) <u>M</u> Surfa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Marl I <u>M</u> Hydro <u>M</u> Dry-S miner	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic)	6) Venal Ima oncave S r (C1) ole (C2) (v	igery (B7) urface (B		Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra	ators (at leased Leaves (E ed Leaves (E spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators(any one indicator Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (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)	o <u>r is sufficient)</u> <u>M</u> Suffa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Mari I <u>M</u> Hydro <u>M</u> Dry-S miner <u>M</u> Other	ce Soil Cracks (Bé lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain)	6) enal Ima oncave S r (C1) ole (C2) (t	ugery (B7) urface (B w/in 12"-24		Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra	ators (at leased Leaves (E ed Leaves (E spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators(any one indicator Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (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)	o <u>r is sufficient)</u> <u>M</u> Suffa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Mari I <u>M</u> Hydro <u>M</u> Dry-S miner <u>M</u> Other	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic)	6) enal Ima oncave S r (C1) ole (C2) (t	ugery (B7) urface (B w/in 12"-24		Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra	ators (at leased Leaves (E ed Leaves (E spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator 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)	or is sufficient) <u>M</u> Surfa <u>M</u> Inunc <u>M</u> Spars <u>M</u> Marl I <u>M</u> Hydro <u>M</u> Dry-S miner <u>M</u> Other urface):	ce Soil Cracks (Bé lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain)	6) pincave S r (C1) ble (C2) (v er (in.)	ugery (B7) urface (B w/in 12"-24		Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra	ators (at leased Leaves (E ed Leaves (E spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief	39) Living Roots on (C4) nge w/in 12") nts (D1) 2)	(C3) (within 12"
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DROLOGY ettand Hydrology Indicators (cher imary Indicators (any one indicator / 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) eld Observations (in. from ground si urface Water Present? Yes / ater Table Present? Yes /	<u>or is sufficient)</u> <u> </u> Surfa <u> </u> Spars <u> </u> Marl I <u> </u> Hydrc <u> </u> Dry-S <u> </u> Miner <u> </u> Other <u> </u>	ce Soil Cracks (Ba lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain) Depth of wate Depth to wate	6) erial Ima procave S r (C1) ole (C2) (v er (in.) filled?	ugery (B7) urface (B w/in 12"-24	B) NN NN NN NN NN NN NN NN NN NN NN NN NN	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra	ators (at leased Leaves (E ed Leaves (E ttems (B10)) spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief Test (D5)	39) Living Roots on (C4) nge w/in 12") nts (D1) 2) /in 12") (D4) (caused b	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator 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) Hod Observations (in. from ground si Irface Water Present? Yes ater Table Present? Yes Set turation Present? Yes Set cludes capillary fringe)	or is sufficient) Surfa Spars Mart I Hydro Norgen Other Norgen NOrgen NOrgen NORGEN 	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain) Depth of wate Depth to wate depth but not yet Depth to sat. Epi Endo	6) erial Ima pricave S r (C1) ele (C2) (r er (in.)	agery (B7) aurface (B w/in 12"-24	B)	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra FAC Neutral	ators (at leased Leaves (E ed Leaves (E ttems (B10)) spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief Test (D5)	39) Living Roots on (C4) rge w/in 12") nts (D1) 2) /in 12") (D4) (caused b	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator 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) Hod Observations (in. from ground si Irface Water Present? Yes ater Table Present? Yes Set turation Present? Yes Set cludes capillary fringe)	or is sufficient) Surfa Spars Mart I Hydro Norgen Other Norgen NOrgen NOrgen NORGEN 	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain) Depth of wate Depth to wate depth but not yet Depth to sat. Epi Endo	6) erial Ima pricave S r (C1) ele (C2) (r er (in.)	agery (B7) aurface (B w/in 12"-24	B)	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra FAC Neutral	ators (at leased Leaves (E ed Leaves (E ttems (B10)) spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief Test (D5)	39) Living Roots on (C4) rge w/in 12") nts (D1) 2) /in 12") (D4) (caused b	(C3) (within 12"
DROLOGY etland Hydrology Indicators (cher imary Indicators (any one indicator / 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) eld Observations (in. from ground si inface Water Present? Yes	or is sufficient) Surfa Spars Mart I Hydro Norgen Other Norgen NOrgen NOrgen NORGEN 	ce Soil Cracks (Be lation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odor eason Water Tab al, 12"-40" organic) (explain) Depth of wate Depth to wate depth but not yet Depth to sat. Epi Endo	6) erial Ima pricave S r (C1) ele (C2) (r er (in.)	agery (B7) aurface (B w/in 12"-24	B)	Water-Stain Drainage Pa Oxid'd Rhizo Presence of (pos. o,o or Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", car Microtopogra FAC Neutral	ators (at leased Leaves (E ed Leaves (E ttems (B10)) spheres on Reduced In soil color cha s (C5) tressed Plan Position (D2 itard (D3) perch H ₂ O w aphic Relief Test (D5)	39) Living Roots on (C4) rge w/in 12") nts (D1) 2) /in 12") (D4) (caused b	(C3) (within 12"

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR 2021

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PHOTO REPOR	кт			Marshall Airport a	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

Direction: NA

IA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: W

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	Т			Marshall Airport a	nd 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	n Direction: W	Photo Type:	Direction:

Photo Type: Vegetation

Direction: N Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

IA Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

Plot Number Plot Type	HDR517 FVP: Field Verification Point	Wetland Status	Wetland PEM1F	Vegetation Type	Wet Herbaceous
		NWI Classification			
			PEINIF	Latitude (DD)	61.86383
Plot Date	9/11/2022	HGM	Slope	Longitude (DD)	-162.03741
Photo Type: Vegetation	<image/>	Photo Type: Vegetation	Direction: S	Photo Type:	Direction:

Plot NumberHDR518Wetland StatusWetlandVegetation TypeOpen Mixed Shrub Sedge TurderPlot TypeFPP: Fleld Verification PointMWI ClassificationFSS1/EM18Lattude (DD)G.16.3331Plot Date9/11/2022HGMSlopeLongtude (DD)-162.03776	PHOTO REPOR	RT			Marshall Airport a	nd Access Road Improvement
	Plot Number	HDR518	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundra
Plot Date 9/11/2022 HGM Slope Longitude (DD) -162.03776	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

HOTO REPOR	۲T			Marshall Airport a	nd Access Road Improveme
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
	Today Devolution and a state of the second				
		Contraction of the second			
Alexa Ca	to a light of the				
<u>i an</u>					
		aleas s			
oto Type: Vegetation	Direction: NW	Photo Type: Vegetation	Direction: SE	Photo Type:	Direction:

WETLAND DE	TERMINATION DATA FORM -	Alaska Region
Project: MARSHALC AIRPORT	Borough/City: Kusilua	K CA Date: 9/11/22
Applicant/Owner: ADOT		Sampling Point #: 520
Investigator(s): 2H/BC	Firm: H	HDR Alaska, Inc.
Lat. (dec.") 61.871 589 Long. 162.03	8534 ±' NAD 83 Recorded of	on GPS?: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Al		1 100
Local relief: Shape across slope: (inear/ convex / concav		
Photo nos./descriptions: NEW - 2 5011		
Are climatic / hydrologic conditions on the site typical for the	his time of year? Yes: No: 🗡	If no, explain. Wetter HGM type: N/A
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ signific	antly disturbed? Are "Normal Circu	umstances" present? Yes 🔀 No
Are Vegetation M, Soil M, or Hydrology M natural	lly problematic? In Dry Season? Ye	esNo 🔀 If needed, explain answers here.
SUMMARY OF FINDINGS		and a second a second for the second
Hydrophytic Vegetation Present? Yes 🔀 I	No Is the sampled are	and the second
Hydric Soil Present? Yes I	No within a wetland?	
Wetland Hydrology Present? Yes X	No 🚬 🛊	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolut	e % cover (not relative cover). % car	n total>100%.
Tree Stratum (dbh≥ 3″)	Real School and Market Street	Dominance Test worksheet:
the second	Cov.% Dom? Ind.	Number of Dominant Species
1. None 5		That are OBL, FACW, or FAC:(A)
2 6	<u> </u>	Total Number of Dominant
3 7		Species Across All Strata:(B)
4 8		
Total Tree Cover:		Percent of Dominant Species That are OBL, FACW, or FAC: (0-0 (A/B)
50% of total cover: 204	% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)		Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind.	Abs.Cov.% Dom? Ind.	0 0
1 41, 510. 30 Y FAC 7.		11 00
<u> </u>	A State of the second second	
		FACU species X4=
6. 12.		UPL + NL species X5=
Total Sapling/Shrub Cover:	50	Column Totals: <u>157</u> (A) <u>454</u> (B)
0.0	% of total cover: 11.6	200
Herb Stratum		Prevalence Index = B/A = 2.89
Abs.Cov.% Dom? Ind.	Abs. Cov.% Dom? Ind.	the state of the state of the state of the
1. Cal. can. 70 4 FAC 12.		
2. Rub. arc. 5 FAL 13		Hydrophytic Vegetation Indicators:
	Carlotte Carlotte Carlotte	Dominance Test is >50%
4. Galium Trifi FACW15.		Prevalence index is ≤3.0
5. Equ. arv. 15 FAL 16 6. Pol. acu. 5 FAC 17.		Morphological Adaptations ¹ (Provide supporting
6. <u>pol. acu.</u> 5 <u>PAL 17.</u> 7. <u>Viola sp. 1</u> <u>-</u> 18.		data in Remarks or on a separate sheet)
8 19		Problematic Hydrophytic Vegetation ¹ (Explain)
9 20		in the second
10 21		¹ Indicators of hydric soil and wetland hydrology must
11 22		be present unless disturbed or problematic.
	00	Straight and straight in the
	6 of total cover: 20	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 207		Vegetation Yes <u>No</u> No
% Cover of Wetland Bryophytes% Total	Cover of Bryophytes%	
(where applicable) Remarks:	CONTRACTOR DATE	

				Side -		
Depth Horizon <u>Soil Matrix</u>	Ree	dox Features			a,a dip.	a la
<u>(in.) (opt.) Color (moist) %</u> -2 De	Color (moist)	<u>% Type</u>	Loc ²		(pos/ neg)	<u>Remarks</u> (or use comment numb
-5 A 104R 3/2 100			-	SILO		A - Trate of deter
-7 R 2,64412 50	7.54R3/2	SO CM	MPI	SILO	al	Contraction Procession
-18 B2 104R 4/2 95	7.54R 3/2	5 0	21	SILO	al	The search search
1-20 Bz 2,54 4/1 86	7.54R 3/2	20 0	MPI	SILO	17	
	1131 -13		110	No. 19 August	10	Territoria - Charles
The state of the state	Ne a la succ	1. 18 3	y	148-00	VI.	The State State
Type: C = Concentration, D = Depletion, RM = I	Reduced Matrix, CS=0	Coated Sand G	rains ² Locati	on: PL = Pore	Lining. RC =	= Root Channel, M = Ma
ydric Soil Indicators (check ones that apply,						
tandard Indicators:	Indicators for	r Problematic	Hydric Soils	s ³ :		1.2011.004.2011.0
Histosol or Histel (A1)	N Deplete	ed Below Dark S	Surface (A11) <u>N</u>	Alaska Co	olor Change ⁴ (TA4)
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	N_Deplete	d Matrix (F3)		N	Alaska Al	pine Swales (TA5)
Black Histic (A3)	12.	Dark Surface (F	6)	N	Alaska Re	dox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12"of mineral	1			· ·	A CARACTER AND A CARACTER A	d without Hue 5Y or
surface; @" in this pit	_H_ Deplete	ed Dark Surface	(F7)	-14		r Underlying Layer
Thick Dark Surface (A12)	A Redox	Depressions (F	3)	N	_α,α-dipyria	dyl positive (see pg. 91)
Alaska Gleyed (A13)	M Red Par	rent Material (F	21)	N		v organic matter, low iron, l
Alaska Redox (A14)		allow Dark Sur	and a second sec		pH, rece Supplem	ntly developed., see p.91 o ent; explain in Remarks)
Alaska Gleyed Pores (A15)				onendmanin		etland hydrology, and ar
Alaska Oleyed Poles (A15)	appropriate la	andscape posit	on must be p	present unless	disturbed or	problematic.
and the state of the second second	⁴ Give details of	of color change	in Remarks		1	all in the part
estrictive Layer (if present)	Drainage Clas	ss: SPD	THE A		10	V
Type: None	Soil Map Unit	Name:	Hyd	dric Soil Prese	ent?	Yes No 🔏
Depth (inches): <u>W/A</u>	and a first of				1995	
comments:						and the second se
No primary hydro for proble	mutic. Negar	five 22 -	lests.	1-4 1-4	1	
No primary hydro for proble	amutic. Negar Saturated.	live Id -	lests.	1-4 1-1-1 1-1-1 1-4 1-1-1 1-4	1.1	
Do primary hydro for proble Soil profile noist but not: DROLOGY	saturated.	. John .)-3 1-4 245	1	
Poprimary hydro for proble Soil profile moist but not : DROLOGY Vetland Hydrology Indicators (Check ones that	Saturated . tapply, measure from	. John .		ondary Indicate	ors (at least	2 are required)
Poprimary hydro for proble Soil profile moist but not : DROLOGY Vetland Hydrology Indicators (check ones tha rimary Indicators (any one indicator is sufficient	Saturated . tapply, measure from	. John .	: <u>Sec</u>	ondary Indicate		
Poprimary hydro for proble Soil profile moist but not : DROLOGY Vetland Hydrology Indicators (check ones tha rimary Indicators (any one indicator is sufficient Surface Water (A1)	En force from tapply, measure from nt) urface Soil Cracks (B6	n soil surface)	Sec.	Water-Stained Drainage Patte	Leaves (B9 ems (B10)_))
Do primary hydro for proble Soil profile moist but not a DROLOGY Vetland Hydrology Indicators (check ones tha rimary Indicators (any one indicator is sufficient Surface Water (A1)	Saturated . tapply, measure from nt)	n soil surface)	37) <u>Sec</u>	Water-Stained Drainage Patte Oxid'd Rhizosp	Leaves (B9 ems (B10) _ heres on Li)) iving Roots (C3) (within 1
Do primary hydro for problem Soil profile moist for motif DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient s	En force from tapply, measure from nt) urface Soil Cracks (B6	n soil surface) 6) erial Imagery (I	37) <u>Sec</u>	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re	Leaves (B9 ems (B10) _ heres on Li educed Iron	ving Roots (C3) (within 1 (C4)
Poprimary hydro for produ <u>Soil profile moist bat not</u> DROLOGY etland Hydrology Indicators (check ones that <u>imary Indicators</u> (any one indicator is sufficient <u>Surface Water (A1)</u> <u>High Water Table (A2) (w/in 12")</u> <u>Saturation (A3) (w/in 12")</u>	En for a feature from tapply, measure from nt) urface Soil Cracks (Be hundation Visible on A	n soil surface) 6) erial Imagery (I	37) <u>Sec</u> 7 87) <u>N</u> (B8) <u>N</u>	Water-Stained Drainage Patte Oxid'd Rhizosp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color charg	ving Roots (C3) (within 1 (C4)
Poprimary hydro for problem Soil profile more that DROLOGY 'etland Hydrology Indicators (check ones that imary Indicators (any one indicator is sufficient Surface Water (A1) // S High Water Table (A2) (w/in 12") // Ir Saturation (A3) (w/in 12") // S Water Marks (B1) // N	tapply, measure from <u>nt)</u> urface Soil Cracks (Be nundation Visible on A parsely Vegetated Co	n soil surface) 6) erial Imagery (l encave Surface	(B8) Sec Sec Sec Sec Sec Sec Sec Sec	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Leaves (B9 oms (B10) _ oheres on Li educed Iron il color chang C5))) iving Roots (C3) (within 1) (C4) ie w <i>i</i> in 12")
Popping hydro for problem Soil profile moist for her in DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Vetland Hydrology Indicators (any one indicators) Vetland Hydrology I	t apply, measure from tt apply, measure from <u>nt1</u> urface Soil Cracks (B6 nundation Visible on A parsely Vegetated Co lagl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab	n soil surface) 6) erial Imagery (I oncave Surface • (C1)	(B8)	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or so Salt Deposits (Stunted or Stre	Leaves (B9 ams (B10) _ theres on Li educed Iron il color chang C5) essed Plants)) iving Roots (C3) (within 1 0 (C4) e w/in 12") s (D1)
Popping My dro for production Soil profile most for production Soil profile most for production DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient of suffici	En for a for a formation of the second secon	n soil surface) 6) erial Imagery (I oncave Surface • (C1)	Sec. 37) (B8) 24" ¥	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. a, a or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3))) lving Roots (C3) (within 1 0 (C4) e w/in 12") s (D1) FC
Popping My dro for production Soil profile most for production DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient of suff	t apply, measure from tt apply, measure from <u>nt1</u> urface Soil Cracks (B6 nundation Visible on A parsely Vegetated Co lagl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab	n soil surface) 6) erial Imagery (I oncave Surface • (C1)	B8)	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. a.a or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pu	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in	1) Iving Roots (C3) (within 1 0 (C4) 1e w/in 12") s (D1) FC 112")
Deprinting hydrol for problem Soil profile most for hord DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Surface Water (A1) N S High Water Table (A2) (w/in 12") In Saturation (A3) (w/in 12") S Water Marks (B1) M S Drift Deposits (B3) M D	En for a for a formation of the second secon	n soil surface) 6) erial Imagery (I oncave Surface • (C1)	37) (B8) -24" Sec. N N N N N N N N N N N N N	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D)) lving Roots (C3) (within 1 0 (C4) e w/in 12") s (D1) FC
DROLOGY Vetland Hydrology Indicators (check ones that inmary Indicators (any one indicator is sufficient) Surface Water (A1) ////////////////////////////////////	En for a for a formation of the second secon	n soil surface) 6) erial Imagery (I oncave Surface • (C1)	37) (B8) -24" Sec. N N N N N N N N N N N N N	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. a.a or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can pu	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D	1) Iving Roots (C3) (within 1 0 (C4) 1e w/in 12") s (D1) FC 112")
Provide and the provided of the	tapply, measure from nt) urface Soil Cracks (B6 nundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab nineral, 12"-40" organic) ther (explain)	n soil surface) 6) erial Imagery (l encave Surface - (C1) le (C2) (w/in 12*	37) (B8) -24" Sec. N N N N N N N N N N N N N	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D	1) Iving Roots (C3) (within 1 0 (C4) 1e w/in 12") s (D1) FC 112")
Popping Hydro for production Soil profile Most for here DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient of	tapply, measure from nt) urface Soil Cracks (Be nundation Visible on A parsely Vegetated Co lan Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab nineral, 12"-40" organic) ther (explain) Depth of wate	n soil surface) 6) erial Imagery (I oncave Surface • (C1) le (C2) (w/in 12'	37) (B8) -24"	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D	1) Iving Roots (C3) (within 1 0 (C4) 1e w/in 12") s (D1) FC 112")
Popping Hydrol for problem Soil profile Most but not DROLOGY /DROLOGY /DROLOGY // Jacobia // Jacobia // Jacobia // Jacobia // High Water Table (A2) (w/in 12") // Jacobia // High Water Table (A2) (w/in 12") // Saturation (A3) (w/in 12") // Sediment Deposits (B2) // Diff Deposits (B3) // Algal Mat or Crust (B4) // Iron Deposits (B5) // Iron Deposits (B5) // Jacobia // Jacobia // Jacobia // Algal Mat or Prosent? // Yes // Vater Table Present? // Yes	tapply, measure from nt) urface Soil Cracks (Be nundation Visible on A parsely Vegetated Co land Deposits (B15) ydrogen Sulfide Odor ny-Season Water Tab nineral, 12"-40" organic) ther (explain) Depth of water Depth to water	n soil surface) 6) erial Imagery (l oncave Surface (C1) le (C2) (w/in 12'	37) (B8) -24"	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D	1) Iving Roots (C3) (within 1 0 (C4) 1e w/in 12") s (D1) FC 112")
Poprofile More that for profile Soil profile More that for profile DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Surface Water (A1) Vestar Sufficient High Water Table (A2) (w/in 12") Vestar Sufficient Saturation (A3) (w/in 12") Vestar Sufficient Water Marks (B1) Vestar Sufficient Sediment Deposits (B2) Vestar Marks Drift Deposits (B3) Vestar Sufficient Vestar Marks (B1) Vestar Sufficient	tapply, measure from nt) urface Soil Cracks (Be nundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab inieral, 12"-40" organic) ther (explain) Depth of water Depth to water that depth but not yet	n soil surface) 6) erial Imagery (loncave Surface (C1) le (C2) (w/in 12) er (in.) er (in.)	37) (B8) -24"	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D	(0) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (Within 1 (Within 1
Popping My dro for production Soil profile Moist 6st net YDROLOGY Vetland Hydrology Indicators (check ones that arimary Indicators (any one indicator is sufficient of the sufficient of	tapply, measure from nt) urface Soil Cracks (Be nundation Visible on A parsely Vegetated Co land Deposits (B15) ydrogen Sulfide Odor ny-Season Water Tab nineral, 12"-40" organic) ther (explain) Depth of water Depth to water	n soil surface) 6) erial Imagery (loncave Surface (C1) le (C2) (w/in 12) er (in.) er (in.)	-24" X	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	Leaves (B9 ems (B10) heres on Li educed Iron il color chang (C5) essed Plants osition (D2) arch H ₂ O w/in hic Relief (D est (D5)	(0) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (Within 1 (Within 1
Popping My dro for production Soil profile Moist 6st net 'DROLOGY Vetland Hydrology Indicators (check ones that rimary Indicators (any one indicator is sufficient Surface Water (A1) ////////////////////////////////////	tapply, measure from tapply, measure from nt1) urface Soil Cracks (B6 nundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab ineral, 12"-40" organic) ther (explain) Depth of water Depth to water that depth but not yet Epi Endo	er (in.) filled ?: Unknown	37) (B8) -24" Wet	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Ra (pos. α,α or so Salt Deposits (Stunted or Stra Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp FAC Neutral Te	Leaves (B9 ems (B10) heres on Li educed Iron il color chang (C5) essed Plants osition (D2) arch H ₂ O w/in hic Relief (D est (D5)	(0) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (Within 1 (Within 1
Image: Solid profile model Solid profile model Vetland Hydrology Indicators (check ones that primary Indicators (any one indicator is sufficient of the sufficient of	tapply, measure from tapply, measure from nt) urface Soil Cracks (B6 nundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab ineral, 12"-40" organic) ther (explain) Depth of water Depth to water that depth but not yet Epi Endo	er (in.) filled ?: Unknown	37) (B8) -24" Wet	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Ra (pos. α,α or so Salt Deposits (Stunted or Stra Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp FAC Neutral Te	Leaves (B9 ems (B10) heres on Li educed Iron il color chang (C5) essed Plants osition (D2) arch H ₂ O w/in hic Relief (D est (D5)	(0) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (Within 1 (Within 1
Algal Mater Present? Yes No YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient of the sufficient of th	tapply, measure from tapply, measure from nt1) urface Soil Cracks (B6 hundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab hineral, 12"-40" organic) ther (explain) Depth of water Depth to water that depth but not yet Epi Endo ing well, aerial photos,	n soil surface) 6) erial Imagery (loncave Surface (C1) le (C2) (w/in 12' er (in.) filled?: (in.) Unknown , previous inspe	37) (B8) -24" Wet	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Ra (pos. α,α or so Salt Deposits (Stunted or Stra Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp FAC Neutral Te	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D est (D5)	Yes X No
Algal Mater Present? Yes No YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient of the sufficient of th	tapply, measure from tapply, measure from nt1) urface Soil Cracks (B6 hundation Visible on A parsely Vegetated Co larl Deposits (B15) ydrogen Sulfide Odor ry-Season Water Tab hineral, 12"-40" organic) ther (explain) Depth of water Depth to water that depth but not yet Epi Endo ing well, aerial photos,	n soil surface) 6) erial Imagery (loncave Surface (C1) le (C2) (w/in 12' er (in.) filled?: (in.) Unknown , previous inspe	37) (B8) -24" Wet	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of Ra (pos. α,α or so Salt Deposits (Stunted or Stra Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp FAC Neutral Te	Leaves (B9 ems (B10) _ heres on Li educed Iron il color chang C5) essed Plants osition (D2) ard (D3) erch H ₂ O w/in hic Relief (D est (D5)	Yes X No

HOTO REPOR	RT			Marshall Airport a	nd 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
	A C C C C C C C C C C C C C C C C C C C				

Direction: NA

Photo Type: Vegetation Direction: S

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: MARSHALL AIRPORT Borough/City: Kusilva	k CA Date: 9/11/2022
Applicant/Owner: APOT	Sampling Point #: <u>52</u>)
nvestigator(s): <u>ZH/BC</u> Firm: H	IDR Alaska, Inc.
at. (dec.°) 61.871363 Long. 162.038276 ± 'NAD83 Recorded o	on GPS?: X Marked on map? Field Map #:
subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Valley Bottom Slope (%): 3 Aspect: W
ocal relief: Shape across slope: linear/convex/concave) Shape up/downslope: linear/c	convex/concave, NWI classification: PS51/IEM
	Veg Type (Viereck Level 4 or other): 77C2a
re climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain Wetter HGM type: _ Slope
re Vegetation 📈, Soil 📈, or Hydrology 📈 significantly disturbed? Are "Normal Circu	mstances" present? Yes X No
re Vegetation 📈 , Soil 📈 , or Hydrology 📈 naturally problematic? In Dry Season? Ye	es No 📐 If needed, explain answers here.
SUMMARY OF FINDINGS	and and the couper that the set of the
Hydrophytic Vegetation Present? Yes No Is the sampled are	and the second
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
EGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total >100%.
Tree Stratum (dbh≥ 3")	Dominance lest worksneet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Pic. Co. 5 4 FACU 5.	Number of Dominant Species 4 That are OBL, FACW, or FAC: (A)
2 6 6	Total Number of Dominant
3 7 7	Species Across All Strata:6 (B)
4 8	and the second
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 2.5 20% of total cover: 1.0	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	0
1. Picsla, 5 FACU 7. And pol, 3 FACW	OBL species X1=
Betinan: 30 Y FAC 8.	FACW species 38 X2= 76
B. Vac. Uli 25 Y FAC 9.	FAC species 44 X3= $23/$
1. <u>Sn1. ρι]. 5 FACW 10.</u>	FACU species X4=
Ello tom 10 FALW11	UPL + NL species X5=
<u>. CMp, nig. T FAL 12.</u>	Column Totals: <u>25</u> (A) <u>397</u> (B)
Total Sapling/Shrub Cover: <u>95</u>	
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>	Prevalence Index = B/A =
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
2.Cal. can. 10 4 FAC 13.	Hydrophytic Vegetation Indicators:
Pet, fri, 5 TALW 14.	Dominance Test is >50%
Rub, cha. 5 FALW 15.	Prevalence Index is ≤3.0
Equ. arv. 5 FAC 16.	Morphological Adaptations ¹ (Provide supporting
<u> </u>	data in Remarks or on a separate sheet)
· • 18 ·	Problematic Hydrophytic Vegetation ¹ (Explain)
·	
0 20 20 21	¹ Indicators of hydric soil and wetland hydrology must
1 22.	be present unless disturbed or problematic.
Total Herb Cover: 35	1
50% of total cover: 17.5 20% of total cover: 7.0	Hydrophytic
Circular 1/10-ac plot or other plot dimension: $\frac{10 \times 10}{2}$. % of bare ground:	Vegetation Yes <u>No</u>
	Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable) Remarks:	*

SOIL			1. al.	· .					Sampling Point#: 521
Profile Description: (Describe to the d	epth need	ed to document the	indicate	or or confirm	nthe abse	ence of indicate	ors)	
Depth Honzon	Soil Matrix	<u>(</u>	Redox Features					α,α dip.	n an
(in.) (opt.) 0-3 00	<u>Color (moist)</u>	<u>%</u>	<u>Color (moist)</u>	<u>%</u>	Type ¹	Loc ²	Texture	(pos/ neg)	<u>Remarks</u> (or use comment number)
<u>18-20 A/B</u> 20-21 B	7,54R 3/2 54412	1 <u>00</u> 100				*	SILO	NT	·
								· · · · · · · · · · · · · · · · · · ·	
									= Root Channel, M = Matrix
Hydric Soil Indicators	check ones tha	it apply, m	easure from top of	minera	l layers u	nless oth	erwise noted):	ar.	
Standard Indicators: Histosol or Histel Histic Epipedon (underlain by mi Black Histic (A3) Hydrogen Sulfide surface; @ M Thick Dark Surface Alaska Gleyed (A Alaska Redox (A Alaska Gleyed Po Restrictive Layer (if pre	A2) (8-16" organic ineral soil with chron (A4) (within 12"o " in this pit ce (A12) (13) 14) ores (A15)	na ≤2)	K Deplete K Redox N Deplete M Redox K Very Sh 30ne indicato	ed Belov ed Matri Dark Su ed Dark Depress rent Ma nallow D or of hyd andscap of color	w Dark Sur x (F3) rface (F6) Surface (F sions (F8) terial (F21) ark Surfac rophytic ve position change in	face (A11 7)) e (F22) must be p) A A N A A A A A A A A A A A A A A A A A	_ Alaska Alı _ Alaska Re _ AK Gleye _ Redde _ α,α-dipyri _ Other (Lov pH, rece Supplem dicator of we	olor Change ⁴ (TA4) pine Swales (TA5) edox with 2.5Y Hue d without Hue 5Y or r Underlying Laver dyl positive (see pg. 91) w organic matter, low iron, high infly developed., see p.91 of nent; explain in Remarks) etland hydrology, and an problematic.
Type: Depth (inches):	N/A)		Soil Map Unit	/ /)	Hyo	Iric Soil Prese	ent?	Yes No
Comments: 1. 2. 3.				,				н Аланан И С	
HYDROLOGY							w		
Wetland Hydrology In Primary Indicators (ar A Surface Water (A1	ny one indicator is)	sufficient)	ace Soil Cracks (B6	6) .		NN	Water-Stained Drainage Patte	Leaves (B9 ms (B10)_	-
High Water Table (Saturation (A3) (w/		Spa	ndation Visible on A rsely Vegetated Co Deposits (B15))) <u>M</u> I	Oxid'd Rhizosp Presence of Re (pos. α,α or soi Salt Deposits ((duced Iron	iving Roots (C3) (within 12") (C4) e w/in 12")

-		oopoon	.5 (5 10)	
\sim	_ Hydro	ogen Su	ulfide O	dor (C1)

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(-				
a 1	Dry Cor	icon Wate	r Tabla	1001 1	- 40" 04"
8N Z	DIV-Sea	ison Wate	rable		12-24
				() (
	mineral	12"-40" org	ianic)		
	minoral,	12 10 019	amoj		
			-		
23 1					

1				o. g
N	Other (expl	ain)	

			Olumed of Stressed Flams (D1	
Prift Deposits (B3)	<u>∧</u> Dry-Sea mineral	ason Water Table (C2) (w/in 12"-24" , 12"-40" organic)	$\frac{1}{\sqrt{2}}$ Geomorphic Position (D2) $-5l$	ugat break
<u>M</u> Algal Mat or Crust (B4)	0	explain)	Δ Shallow Aquitard (D3) (w/in 24", can perch H ₂ O w/in 12")	Kummocky
N Iron Deposits (B5)	Ja ⁿ o, S		Microtopographic Relief (D4) (c	
			🔨 FAC Neutral Test (D5)	
Field Observations (in. from	ground surface):	······	17	······································
Surface Water Present?	Yes No	Depth of water (in.)		
Water Table Present?	Yes <u>/ No</u>	Depth to water (in.) <u>/8</u>		
7	Seeping in at that d	epth but not yet filled?: //		
Saturation Present?	Yes No	Depth to sat. (in.)	Wetland Hydrology Present?	Yes X No
(includes capillary fringe)		Epi Endo Unknown	A Contract Contract	
Describe Recorded Data (str	eamgauge, monitoring we	ell, aerial photos, previous inspection	s), if availabl e :	``````````````````````````````````````
	A second s			
Remarks:				
Low area w/ponde	wher located	just outside of plat.	• _W	

N

Sediment Deposits (B2)

 $\underline{\mathcal{M}}$ Stunted or Stressed Plants (D1)

PHOTO REPOR	RT			Marshall Airport a	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
	R R R R R R R R R R R R R R R R R R R				

Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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: KUSilva	CA Date: 9/12/2022
Applicant/Owner: ADOT	Sampling Point #: 523
Investigator(s): 2H/BC Firm: H	
Lat. (dec. °) 61. 671236 Long. 162.039173 ± NAD 83 Recorded of	on GPS?: X Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landfo	
Local relief: Shape across slope: (inear/ convex / concave Shape up/downslope: (inear)	
	_ Veg Type (Viereck Level 4 or other): 77/88a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: 🗡	
Are Vegetation \mathcal{M} , Soil $\mathcal{M}_{\mathcal{A}}$, or Hydrology \mathcal{M} significantly disturbed? Are "Normal Circu	
Are Vegetation $\underline{\mathcal{M}}$, Soil $\underline{\mathcal{M}}$, or Hydrology $\underline{\mathcal{M}}$ naturally problematic? In Dry Season? Ye	esNo If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	2
Hydric Soil Present? Yes X No No	
Wetland Hydrology Present? Yes <u>></u> No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%.
<u>Tree Stratum</u> (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. None 5	That are OBL, FACW, or FAC:
2 6	Total Number of Dominant
3 7 7	Species Across All Strata:(B)
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 15 X1= 15
1. Sal. pul. 10 T FACW 7.	FACW species 40 X2= 80
2.5a).5cp. 10 FAC 8	FAC species 52 $x_3 = 156$
3. Sal. beh. 10 FAC 9	FACU species X4=
5. 11.	UPL + NL species X5= 0
6 12.*	Column Totals: / (A) _ 255 (B)
Total Sapling/Shrub Cover:	
50% of total cover:	Prevalence Index = B/A =
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Calican, 20 Y FAC 12	Hydrophytic Vegetation Indicators:
2. Com. pali 15 7 OBL 13	
3. <u>Rub. avc.</u> 7 FAC 14	Dominance Test is >50% X Prevalence Index is ≤3.0
4. <u>EqJ. o.v. 5</u> <u>FAC 15.</u> 516	
6 17	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
	be present unless disturbed or problematic.
Total Herb Cover: 47 50% of total cover: 23.5 20% of total cover: 9,4	
	Hydrophytic Vegetation Yes X No
Circular 1/10-ac plot <u></u> or other plot dimension: <u>%</u> of bare ground:	Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	· · · · · · · · · · · · · · · · · · ·

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r rome besonpaon.	(Describe to the de	epunneed	dea to accument the	indicato	prorconfin	n the abse	ence of indicate	ors)			
Depth Horizon <u>Soil Matrix</u> <u>Redox Features</u>						+ 1	a,a dip.				
<u>(in.) (opt.)</u>)-2 0e	<u>% Color (moist) % Type¹</u>		Loc ²	Texture	(pos/ neg)	<u>Remarks</u> (or use comment number)					
-7 AIB -11 Oeb	543/1	90	7.54R 414	10	C	PL,RC	SALO	_			
-20 0	2,54 3/2	80	7.54R 3/3	20	C	PL	VFSALO	+			
			educed Matrix CS-		Sand Cm				= Root Channel, M = Matri		
lydric Soil Indicato									= Root Channel, M = Math		
tandard Indicators			Indicators for		State State State	Conception and the second s			. Contraction of the		
N Histosol or Histo	el (A1)				v Dark Su			Alaska C	color Change ⁴ (TA4)		
underlain by	n (A2) (8-16" organic mineral soil with chron	s,sat'd, na ≤2)	<u>N</u> Deplet	ed Matrix	x (F3)		N	1	lpine Swales (TA5)		
Black Histic (A3			Redox	Dark Su	rface (F6)		N	Alaska F	edox with 2.5Y Hue		
<u>U</u> Hydrogen Sulfi surface; @	de (A4) (within 12"o " in this pit	fmineral	Deplet	ed Dark	Surface (F	7)	A		ed without Hue 5Y or er Underlying Layer		
/_ Thick Dark Surf	ace (A12)		_N_ Redox	Depress	sions (F8)		N	_α,α-dipy	ridyl positive (see pg. 91)		
V_ Alaska Gleyed	(A13)		N Red Parent Material (F21) N Other (Low organic matter					ow organic matter, low iron, hig			
🗡 Alaska Redox (A14)	1-11	M Very Shallow Dark Surface (F22) pH, recently developed., s Supplement; explain in Re								
N_Alaska Gleyed	Pores (A15)		³ One indicate appropriate l ⁴ Give details	andscap	be position	must be p	one primary inc resent unless o	dicator of v disturbed c	vetland hydrology, and an or problematic.		
estrictive Layer (if p	resent)		Drainage Cla	iss: Pi	7				and the product of the loss		
Type: Depth (inches):	NTA		Soil Map Uni	t Name:	and a	Hyd	Iric Soil Prese	ent?	Yes_X_ No		
Comments:	140 150								and a second		
DROLOGY											
Vetland Hydrology				m soil sı	urface):	1	ondary Indicato Water-Stained	and the second	t <u>2 are required)</u> 9)		
Surface Water (A	And the second s		rface Soil Cracks (B			Drainage Patterns (B10)					
_ High Water Table	e (A2) (w/in 12")	N Inu	Indation Visible on A								
Saturation (A3) (arsely Vegetated Co	B) \bigvee Presence of Reduced Iron (C4) (pos. a, a or soil color change w/in 12")							
Water Marks (B1)			rl Deposits (B15)	,	N Salt Deposits (C5)						
Sediment Depos	its (B2)		Y	rogen Sulfide Odor (C1)				N Stunted or Stressed Plants (D1)			
Drift Deposits (B3	3)	10 Dry mi	-Season Water Tab neral, 12"-40" organic)	ble (C2) (w/in 12"-24	7.5	Geomorphic Po Shallow Aquita) - Floodplann		
Algal Mator Crus	t (B4)	N Ot	ner (explain)				(w/in 24", can pe		in 12") Laurente		
1	1					Y	Vicrotopograp	hic Relief (D4) (caused by water)		
✓ Iron Deposits (B5)	,					· VI	AC Neutral Te	st (D5)			

			AC Neutral Test (D5)	
ground surfa	ce):			and the second
Yes X	No	Depth of water (in.) 1-6" in low	pareas	
Yes X	No	Depth to water (in.)		
Seepi	ng in at tha	t depth but not yet filled?:		
Yes 🖌	No	Depth to sat. (in.) 0-5014,	Wetland Hydrology Present?	Yes X No
		Epi Endo Unknown	A CANADA TA CAMINA	
ream gauge,	monitoring	well, aerial photos, previous inspection	s), if available:	
ut in s. on low a	everal rea vege	low spots through out	= surface water mov	s b/E low areas
	Yes X Yes X Seepi Yes Y	Yes_X No Seeping in at tha Yes_Y No ream gauge, monitoring	Yes X No Depth of water (in.) <u>1-6"</u> in low Yes X No Depth to water (in.) <u>1"</u> Seeping in at that depth but not yet filled?: <u>—</u> Yes Y No Depth to sat. (in.) <u>0 -507</u> ¢, Epi Endo Unknown ream gauge, monitoring well, aerial photos, previous inspection	ground surface): Yes_XNo Depth of water (in.) <u>1-6" in low areas</u> Yes_XNo Depth to water (in.) <u>1"</u> Seeping in at that depth but not yet filled?: <u></u> Yes_XNo Depth to sat. (in.) <u>0-5016</u> , Wetland Hydrology Present?

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR 2021

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	т		_	Marshall Airport a	nd 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 REPOR	т			Marshall Airport a	nd Access Road Improvement
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

V Photo Type: Vegetation

Direction: SE

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

IA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: Kusilva	
Applicant/Owner: <u>HDo T</u>	Sampling Point #: 527
	HDR Alaska, Inc.
Lat. (dec.°) 61. 871578 Long. 162.039974 ± 'NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landf	
Local relief: Shape across slope: (linear) convex / concave Shape up/downslope: linear/	
Photo nos./descriptions: <u>NESW 2-Sail 1-hylio</u> Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X	
Are Vegetation $\frac{\mathcal{N}}{\mathcal{N}}$, Soil $\frac{\mathcal{N}}{\mathcal{N}}$, or Hydrology $\frac{\mathcal{N}}{\mathcal{N}}$ significantly disturbed? Are "Normal Circu	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	es NoX If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes <u>X</u> No Is the sampled an Hydric Soil Present? Yes X No within a wotland	
wium a weuanu	
Wetland Hydrology Present? Yes <u>X</u> No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%. Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3″)	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Nort 5.	Number of Dominant Species 2 That are OBL, FACW, or FAC: (A)
1. Noni 5. 2. 6.	
3 7	Total Number of Dominant Species Across All Strata: 2 (B)
4 8	(0)
Total Tree Cover:	Percent of Dominant Species
j j	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cover:	86.2° -
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
1. Sal. pul. 60 Y FACW7.	OBL species X1=
2 8 8	FACW species X2= X2=
3 9	FAC species X3=
4. <u></u>	FACU species X4=
	UPL + NL species X5=
6 12 12 Total Sapling/Shrub Cover: <u>60</u>	Column Totals: 145 (A) 345 (B)
	7 20
50% of total cover: <u>30</u> 20% of total cover: <u>12</u>	Prevalence Index = $B/A = 2.38$
Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Com. pal. 15 0BL 12	
2. Rub. arc. 10 FAS 13	Hydrophytic Vegetation Indicators:
3. Cal. can. 50 Y FAC 14.	Dominance Test is >50%
4. Equ. arv. 10 FAC 15	Prevalence Index is ≤3.0
	Morphological Adaptations ¹ (Provide supporting
6 17 17	data in Remarks or on a separate sheet)
7 18 8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22 22	be present unless disturbed or problematic.
Total Herb Cover: <u>95</u>	
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>	Hydrophytic Vegetation Yes X No
Circular 1/10-ac plot or other plot dimension: 20×20 % of bare ground:	Vegetation Yes No Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	

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SOIL	Alexandra de la compañía de la comp		1 10 B 18	د. دیکر و داند د	and the second s	n an tais San tais	Sampling Point #: 527
Profile Description: (Describe to the depth needs	ed to document the i	ndicato	r or confir	m the abs	ence of indicat	ors)	
Depth Horizon <u>Soil Matrix</u>	Rec	dox Fea	tures		4 Q.4	α,α dip.	
(in.) (opt.) Color (moist) <u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	(pos/	Remarks
<u>0-2</u> 0i						<u>neg)</u>	(or use comment number)
2-4 00	·······				x		
4-8 B. 2.54 4/1 BS	5YR414	15	<u> </u>	M.RC	Silo	autor.	
	542414	15	C	hQ.DC	SILO		••••••••••••••••••••••••••••••••••••••
	1.542.3/4	15	Guan	L'			
¹ Type: C = Concentration, D = Depletion, RM = Re	duced Matrix, CS=C	coated S	Sand Gra	ins ² Locat	ion: PL = Pore	Linina. RC	= Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, me							
Standard Indicators:	Indicators for				-		
_//Histosol or Histel (A1)	2 C C			, rface (A11		Alaska C	olor Change ⁴ (TA4)
∧/ Histic Epipedon (A2) (8-16" organics, sat'd,							lpine Swales (TA5)
underlain by mineral soll with chroma ≤2) M Black Histic (A3)	6					j.	
M Black Fishic (A3) M Hydrogen Sulfide (A4) (within 12" of mineral	1		face (F6)		<u></u>		edox with 2.5Y Hue
surface; @" in this pit	_/V_ Deplete	d Dark S	Surface (F	7)	10	AK Gleye	ed without Hue 5Y or er Underlying Layer
\mathcal{N}_{-} Thick Dark Surface (A12)	Redox D	epress	ions (F8)		N	- Ang.	idyl positive (see pg. 91)
Alaska Gleyed (A13)	N Red Par	ent Mat	erial (F21)	pu	Other (Lo	w organic matter, low iron, high
Alaska Redox (A14)	Very Sha		•	•		pH, rec	ently developed., see p.91 of ment; explain in Remarks)
Alaska Gleyed Pores (A15)							
<u>_7*</u> Alaska Gleyed Pores (A15)	appropriate la	ndscap	opnytic v e positior	egetation, must be r	, one primary inc present unless (dicator of w disturbed o	etland hydrology, and an romblematic
	⁴ Give details o	fcolor	change in	Remarks	•		· problomatio.
Restrictive Layer (if present)	Drainage Clas	s: ${ \subseteq } { [}$	7 D				
Type:	Soil Map Unit I	Name:		Hy	dric Soil Prese	ent?	Yes <u>X</u> No
Depth (inches): <u>///</u>							
Comments:							
2.							
3.	49444-4-4						
HYDROLOGY							
Wetland Hydrology Indicators (check ones that a	oply, me asure from	soil su	Irface):	Sec	ondary Indicato	ors (at least	2 are required)
Primary Indicators (any one indicator is sufficient)					Water-Stained		
	ace Soil Cracks (B6)	,			Drainage Patte	ems (B10)_	
\underline{N} High Water Table (A2) (w/in 12") \underline{N} Inun	dation Visible on Ae	enial Ima	igery (B7				iving Roots (C3) (within 12")
$\underline{\checkmark}$ Saturation (A3) (w/in 12") $\underline{\bigwedge}$ Spa	rsely Vegetated Cor	ncave S	urface (B	8) 💯	Presence of Re (pos. a, a or so	educed Iro	n (C4)
Water Marks (B1)	Deposits (B15)			N	Salt Deposits (ye w/m iz)
	ogen Sulfide Odor ((C1)			Stunted or Stre	•	ts (D1)
N Drift Deposits (B3)	Season Water Table	e (C2) (v	w/in 12"-24		Geomorphic Po		
Mine mine	eral, 12"-40" organic)				Shallow Aquita		
	er (explain)			V	(w/in 24", can pe		82138V188V1862324
<u>M_</u> Iron Deposits (B5)				1.			D4) (caused by water)
Field Observations (in. from ground surface):	ĸ			` Ž	FAC Neutral Te	est (D5)	
Surface Water Present? Yes No X	Donth of water	(in)					
			17				
			,				
N	t depth but not yet f						
Saturation Present? Yes X No	- • •			Wet	land Hydrology	/ Present?	? Yes <u>X</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring	Epi Endo well, aerial photos			ons) if av	ailahle:		· · · ·
		P101100	- nopeol	515), il av			*
Remarks:		b.	*				
No surface water but algal mats	obstruted and	1000	spots i	andor	n downed	vegeta	tion,
						J	Э

PHOTO REPOR	кт			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

HOTO REPOR	RT			Marshall Airport an	d Access Road Improveme
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

Direction: NA

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

WETLAND DETERMINA	TION DATA FORM -	Alaska Region			
Project: Marshall Airport Boro	ugh/City: Kusilva	KCA	Date: 9/12/2022		
Applicant/Owner: <u>ADOT</u>			Sampling Point #: <u>536</u>		
Investigator(s): <u>ZN/BC</u>	Firm: H	DR Alaska, Inc.			
Lat. (dec.") 61.872845 Long. 162.042964 ±	_'NAD 83 Recorded o	n GPS?: 🔀 Marked	on map? Field Map #:		
Subregion (circle one): SE Southcentral Western Aleutian Int	enor Northem Landfo	m: Terrace / FP	_Slope (%): Aspect:		
.ocal relief: Shape across slope: /lipear/ convex / concave Shape up/downslope: linear / convex / concave NWI classification:					
Photo nos./descriptions: NESTO - 250.1	Camera#:	Veg Type (Viereck Le	vel 4 or other): <u>IIB2a</u>		
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes: No:	_ If no, explain. Welle	HGM type: <u>N/A</u>		
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ significantly distur	bed? Are "Normal Circu	mstances" present? Ye	es <u>×</u> No		
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problema	atic? In Dry Season? Ye	sNoXIfneed	ed, explain answers here.		
SUMMARY OF FINDINGS					
Hydrophytic Vegetation Present? Yes 📈 No	is the sampled area				
Hydric Soil Present? Yes No	within a wetland?		×.		
Wetland Hydrology Present? Yes <u>No </u>		Remarks (e.g., mai			
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	total>100%.			
		Dominance Test wor	rksheet:		
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.% Dom? Ind. Species C	Cov.% Dom? Ind.	Number of Dominant	Species 2		
1. None 5	· · · · · · · · · · · · · · · · · · ·	That are OBL, FACW			
2 6		Total Number of Dom	inant , ,		
3 7		Species Across All St	rata:(B)		
4 8	<u> </u>				
Total Tree Cover:	<i>,</i>	Percent of Dominant That are OBL, FACW			
50% of total cover: 20% of total c	over:	Prevalence Index w			
<u>Sapling/Shrub Stratum (</u> woody plants < 3" dbh)		Total % Cove	rof:Multiply by:		
	.Cov.% Dom? Ind.		C ^A C ^A		
1. Sal. beb. 15 FAC 7		OBL species	X1 = (2.2)		
2. Sal. pul. 40 V FACW 8.		FACW species	$\frac{1}{12}$ $X_2 = \frac{82}{216}$		
3. Ros. aci. 20 Y FALL 9.	· ·	FAC species	$x_3 = \frac{219}{140}$		
4. <u>Vib. edu.</u> 10 FACU10		FACU species	<u>>> </u>		
5, <u>-</u> 11 6 12	<u></u>	UPL + NL species	X5=		
Total Sapling/Shrub Cover: 85		Column Totals: / 2	<u>79</u> (A) <u>777</u> (B)		
50% of total cover: 42.5 20% of total co	12		5 91		
	over. <u>17</u>	Prevalence Index	=B/A= <u>2.96</u>		
Herb-Stratum Abs.Cov.% Dom? Ind. Abs.C	Cov.% Dom? Ind.				
1. Equiary 30 4 EAC 12.					
2. Calican, 20 Y FAC 13.		Hydrophytic Vegetat	tion indicators:		
3. <u>Ruh arc. 5</u> <u>FAK</u> 14		Dominance Te			
4. Gal. trikid FACW 15					
5. Pol. acn. 3 FAC 16 6. Cha. ang. 5 FACU 17			Adaptations ¹ (Provide supporting		
6. <u>Chaiang</u> , <u>5</u> <u>HAU</u> 17 7 18			rks or on a separate sheet)		
8 19		<u>IV</u> Problematic H	/drophytic Vegetation ¹ (Explain)		
9 20					
10 21			oil and wetland hydrology must		
11 22		be present unless dis	turbed or problematic.		
Total Herb Cover:	· ~ /2				
	over: <u>12,8</u>	Hydrophytic	¥		
Circular 1/10-ac plot or other plot dimension: 15×15^{-1} % o		Vegetation Y Present?	es <u>X</u> No		
(where applicable)	ryophytes%				
Remarks:					

Image: Indext index indext index indext index indext indext indext indext i	⁴ (TA4) (TA5)
(in.) (opt.) Color (moist) % Color (moist) % Type ¹ Loc ² Texture (pos/ neg) Rt 0-2 0'	nment number) nel, M = Matrix ⁴ (TA4) (TA5)
Initial topical conditions of the problematic formation of the problematic solution (holds) T_a Type Loc Texture neg() (or use conditions) $Q-Z$ Q'_{L}	nment number) nel, M = Matrix ⁴ (TA4) (TA5)
0-2 0' 1	nel, M = Matrix ⁴ (TA4) (TA5)
2-5 A /0 4 P-7/2 /θ0 5/12 5-11 B_+ 2.54 4/1 90 7.54 8/3 /0 Alphe 5/12 11-72 B_2 2.54 4/1 90 7.54 8/3 20 Alphe 5/12 11-72 B_2 2.54 4/1 90 7.54 8/3 20 Alphe 5/12	⁴ (TA4) (TA5)
5-11 B ₁ 7.54 4/1 90 7.54 2/3 10 C M.PL 5140 11-72 B ₂ 2.54 4/1 90 7.54 2/3 20 C M.PL 5140	⁴ (TA4) (TA5)
II-22 B1 2.54 H1 B0 7.547 3/3 2.0 C M.PL SILo	⁴ (TA4) (TA5)
¹ Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = Pore Lining, RC = Root Char Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : A/_ Histosol or Histel (A1) Alaska Color Change Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma s2) Depleted Below Dark Surface (A11) Alaska Color Change Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying a(α,α-dipyridyl positive (A12)	⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Image: Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Image: Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Image: Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Image: Depleted Matrix (F3) Image: Alaska Alpine Swales Black Histic (A3) Image: Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) Image: Redox Dark Surface (F7) AK Gleyed without Hu Redder Underlying Surface; @	⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Image: Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Image: Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Image: Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Image: Depleted Matrix (F3) Image: Alaska Alpine Swales Black Histic (A3) Image: Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) Image: Redox Dark Surface (F7) AK Gleyed without Hu Redder Underlying Surface; @	⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Indicators in this cippedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) within 12"of mineral sufficience Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (⁴ (TA4) (TA5)
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ : M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Image: Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Image: Depleted Matrix (F3) Image: Alaska Alpine Swales Black Histic (A3) Image: Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) Image: Redox Dark Surface (F7) AK Gleyed without Hu Redder Underlying Surface; @	⁴ (TA4) (TA5)
Standard Indicators: Indicators for Problematic Hydric Soils ³ : <i>M</i> Histosol or Histel (A1) <i>M</i> Depleted Below Dark Surface (A11) <i>M</i> Alaska Color Change Histic Epipedon (A2) (8-16" organics, sat'd, underiain by mineral soil with chroma ≤2) Depleted Below Dark Surface (A11) <i>M</i> Alaska Color Change Black Histic (A3) Depleted Matrix (F3) Alaska Alpine Swales Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redox Depressions (F8)	(TA5)
M Histosol or Histel (A1) M Depleted Below Dark Surface (A11) M Alaska Color Change Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) Within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) a,α-dipyridyl positive ((TA5)
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.5 Hydrogen Sulfide (A4) Within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redox Depressions (F8)	(TA5)
underlain by mineral soil with chroma ≤2) Depleted Matrix (F3) Alaska Alpine Swales Black Histic (A3) Redox Dark Surface (F6) Alaska Redox with 2.6 Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (
Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (YHue
Hydrogen Sulfide (A4) (within 12"of mineral surface; @" in this pit Depleted Dark Surface (F7) AK Gleyed without Hu Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyridyl positive (
surface; @" in this pit Depieted Dark Surface (F7) Redder Underlying Thick Dark Surface (A12) Redox Depressions (F8) α,α-dipyndyl positive (e 5Y or
	see pg. 91)
Alaska Gleyed (A13) Red Parent Material (F21) Other (Low organic material	ter, low iron, higi
pH, recently develope	d., see p.91 of
	•
Alaska Gleyed Pores (A15) ³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydro	logy, and an
appropriate landscape position must be present unless disturbed or problematic ⁴ Give details of color change in Remarks.	e a turina a
Restrictive Layer (if present) Drainage Class: SPD	
Type: <u>Nime</u> Soil Map Unit Name: Hydric Soil Present? Yes	NoX
Depth (inches): N/A	NO <u>/-</u>
Comments: 1.	
	347 · ·
3. X10 primary hydro indicator for problematic Sol (indicators.	
IYDROLOGY	
Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Secondary Indicators (at least 2 are require	
Primary Indicators (any one indicator is sufficient)	<u>o</u> 1
$\underline{\mathcal{N}}$ Surface Water (A1) $\underline{\mathcal{N}}$ Surface Soil Cracks (B6) $\underline{\mathcal{N}}$ Drainage Pattems (B10)	
High Water Table (A2) (w/in 12")	
Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Presence of Reduced Iron (C4) (pos. α,α or soil color charge w/in 12")	
Water Marks (B1) Marl Deposits (B15) Salt Deposits (C5)	÷.
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Stunted or Stressed Plants (D1)	
Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 12"-24" Geomorphic Position (D2)	
mineral, 12"-40" organic)	
	(water)
	(water)
	(water)
	/ water)
	/ water)
	/ water)
	vwater)
	/ water) No
	/ water)

PHOTO REPOR	T			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport ar	nd 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

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Airport Borough/City: Kusilva	
Applicant/Owner: ADOT	Sampling Point #: 53 Z
	HDR Alaska, Inc.
Lat. (dec. °) 61.971728 Long. 162.039227±' NAD 83 Recorded (on GPS?: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landf	
Local relief: Shape across slope (linear) convex / concave Shape up/downslope: (linear)	convex/concave NWI classification: <u>VSSI PMIB</u>
Photo nos./descriptions: <u>NECO 2-Soll</u> Camera#:	0
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation $\frac{M}{M}$, Soil $\frac{M}{M}$, or Hydrology $\frac{M}{M}$ significantly disturbed? Are "Normal Circu	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	esNo If needed, explain answers here.
SUMMARY OF FINDINGS	- -
Hydrophytic Vegetation Present? Yes <u>V</u> No Is the sampled and	Ba , the second s
Hydric Soil Present? Yes X No Within a wetland	? Yes <u>X</u> No
Wetland Hydrology Present? Yes <u>/</u> No	Remárks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. <u>None</u> 5	Thatare OBL, FACW, or FAC: (A)
2 6 7	Total Number of Dominant
3 7	Species Across All Strata:(B)
······································	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 23 X1= 23
1. Sal. p.l. 50 Y FAW 7	FACW species 50 $X2 = 100$
2. Vac, uli, <u>5</u> <u>FAC</u> 8	FAC species 22 $x_3 = 246$
<u>39</u>	FACU species X3- Z / V FACU species X4=
4 10	
6. <u>**</u>	UPL + NL species X5= Column Totals: 155 (A) 309 (B)
Total Sapling/Shrub Cover: 55	Column Totals: $\underline{755}$ (A) $\underline{369}$ (B)
50% of total cover: 27.5 20% of total cover:	Prevalence Index = $B/A = 2.38$
Herb Stratum	Prevalence index = $B/A = \frac{2700}{2}$
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Cal. can. 60 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Com, pal, 20 Y 0BL 13.	
3. Car. agu, 3 OBL 14	Dominance Test is >50%
4. R. b. arc. 7 FAC 15	
5. Equ. arv. 10 FAC 16	Morphological Adaptations ¹ (Provide supporting
6 17 17 18	data in Remarks or on a separate sheet)
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 100	
50% of total cover: 20% of total cover:20	Hydrophytic
Circular 1/10-ac plot or other plot dimension: <u>15 × 15</u> % of bare ground:	Vegetation Yes <u>No</u> No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	

SOIL	, v		ta da series Maria da series Maria da series			and the			Sampling Point #: 53 Z		
Profile Description	n: (Describe to the d	epth needed	to document the	indicato	r or confirm	the abse	nce of indicat	ors)	ounping contra O		
Depth Horizon	Soil Matrix	· .	Redox Features				. α,α dip.				
<u>(in.) (opt.)</u>	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	(pos/	<u>Remarks</u>		
0-3 OC		•						<u>neg)</u>	(or use comment number)		
3-10 3,	2.544/1	70 7	1.5427/4	15	<	M. PL. RC	SNO	+			
		<u>}</u>	54R3/3	15	C	MALAL	<u> </u>				
10-22 B2	545/1	70 7	154R 44	30	<u></u>	mpl	SILO	80 ⁵⁰			
		<u><u><u></u></u></u>						~ <u> </u>	<u>с</u>		
		s. (201 [°]	- 1			-	· · .				
			in an				· ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
1				- <u></u>			11 <u>- 11 11 - 1</u> 1		· · ·		
·····									= Root Channel, M = Matrix		
}	tors (check ones tha	tapply, me a						:			
Standard Indicato			Indicators fo		ematic Hy v Dark Suri		10 A A A A A A A A A A A A A A A A A A A	Alaska Ci	$h = Ch = \pi - \frac{4}{7} (T \wedge A)$		
	on (A2) (8-16" organic	s.sat′d.	. 1		•	ace (ATT)) <u>10</u>		blor Change ⁴ (TA4)		
underlain b	y mineral soil with chron			ed Matrix	in the second		<u>10</u>	Alaska Al	pine Swales (TA5)		
Black Histic (A			N Redox	Dark Su	face (F6)		_ <u>N</u>	<u></u>	edox with 2.5Y Hue		
I <u>IV</u> Hydrogen Su surface: @	lfide (A4) (within 12"o " in this pit	mineral	_a/ Deplet	ed Dark S	Surface (F	7)	<u>_</u> N		d without Hue 5Y or r Underlying Layer		
Thick Dark Su			· N Redox	Depress	ions (F8)		A	8	dyl positive (see pg. 91)		
Alaska Gleye	1		2.1		tenal (F21)		Λ	Other (Lo	w organic matter, low iron, high		
Alaska Redox			1		ark Surfac		<i></i>	pH, rece	ently developed., see p.91 of tent; explain in Remarks)		
Alaska Gleye									etland hydrology, and an		
			appropriate la	andscap	e position	must be p	resent unless	disturbedo	problematic.		
			⁴ Give details		change in	Remarks.					
Restrictive Layer (if Type: Nァ〜			Drainage Cla		2				V		
Depth (inches): N/A						Нуа	ric Soil Pres	ent?	Yes No		
Comments:					******			·	<u> </u>		
1.											
2.											
	·										
HYDROLOGY Wetland Hydrology	Indicators (check o	nes that ann	v measurefro	nsoilei	urface):	Seco	ndary Indicat	nre (at least	2 are required)		
이 이 사람이 많이 있는 것이 안 가지 않았어요. 이 가지	(any one indicator is		, incusurence	11001101	inade).		Nater-Stained				
N Surface Water		6 · ·	e Soil Cracks (B	6)			M Drainage Patterns (B10)				
N High Water Tab	ole (A2) (w/in 12")	N Inund	ation Visible on A	enal Ima	agery (B7)		✓ Oxid'd Rhizospheres on Living Roots (C3) (within 12")				
Saturation (A3)	(w/in 12")	N Spars	ely Vegetated Co	oncave S	Surface (B8	;) <u>/</u> /F	$\frac{\hbar \gamma}{l}$ Presence of Reduced Iron (C4) (pos. α, α or soil color change w/in 12")				
N Water Marks (B	1)	N Marl D	eposits (B15)				Salt Deposits (C5)				
N Sediment Depo	sits (B2)	- 6	gen Sulfide Odo	r (C1)			N Stunted or Stressed Plants (D1)				
N Drift Deposits (E	33)		ason Water Tab		w/in 12"-24	y y	\checkmark Geomorphic Position (D2) FP				
N Algal Mator Cr.		: A È .	al, 12"-40" organic) (oxplain)				Shallow Aquita		4.000		
이 것 같아요. 이 가지 않는 것 같아요.	n tha sha ka sa sa sa		(explain)				(w/in 24", can perch H₂O w/in 12") M⊍d hom . Microtopographic Relief (D4) (caused by water)				
N Iron Deposits (B5) and a standard sta							$\underline{\checkmark}$ FAC Neutral Test (D5)				
Field Observations (in. from ground surfa	ce):						<u> </u>			
Surface Water Pres	ent? Yes	No X	Depth of wate	er (in.)							
Water Tabl e Presen	t? Yes <u>×</u>	No	Depth to wate	er (in.)	19						
Seeping in at that depth but not yet filled?: <u>14</u>											
Saturation Present? Yes X No Depth to sat. (in.) // Wetland Hydrology Present? Yes X No							Yes <u>X</u> No				
(includes capillary fri	• •		Epi Endo	Unknow				· · · · · · · · · · · · · · · · · · ·	-		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:								<u> </u>			

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 Improvement							
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

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 - A	laska Region	
Project: Marshall Airport Borough/City: Kusilua		
Applicant/Owner: <u>ADOT</u>	S	Sampling Point #: <u>535</u>
	R Alaska, Inc.	
Lat. (dec.°) (
Subregion (circle one): SE Southcentral Western Aleutian Intenor Northem Landfor		
Local relief: Shape across slope: (inear / convex / concave Shape up/downslope: linear / co		
Photo nos./descriptions: NGS 2-Sof Camera#:		· ~ ~
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: 🔀		
Are Vegetation \mathcal{M} , Soil \mathcal{M} , or Hydrology \mathcal{M} significantly disturbed? Are "Normal Circum		
Are Vegetation <u>,</u> , Soil <u>,</u> , or Hydrology <u>,</u> naturally problematic? In Dry Season? Yes	No XIf needed	l, explain answers here.
SUMMARY OF FINDINGS		
Hydrophytic Vegetation Present? Yes X No Is the sampled area		
Hydric Soil Present? Yes X No within a wetland?	Yes <u>X</u> No	
Wetland Hydrology Present? Yes <u>Y</u> No	Remarks (e.g., margi	nal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can	total >100%. Dominance Test works	sheet.
<u>Tree Stratum</u> (dbh≥ 3″)	Dominance restworks	. /
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. None 5.	Number of Dominant Sp That are OBL, FACW, o	
1. <u>Norl</u> 5		
3 7	Total Number of Domina Species Across All Strat	
4 8		
Total Tree Cover:	Percent of Dominant Sp	
	That are OBL, FACW, o Prevalence Index wor	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of	1
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	15	,
1. Sal. pul. 30 Y FACW 7.	OBL species 10	
2.5~1, Jas. 30 Y FACW 8	FACW species	
3. <u>Rosiaci, 20 Y FACU9.</u>	FAC species 64	
	FACU species	X4= <u>12</u>
5. <u>Sal. beb. 15</u> FAC 11	UPL + NL species	X5=
Total Sapling/Shrub Cover: 88	Column Totals:	<u>9 (A) <u>420</u> (B)</u>
50% of total cover: 20% of total cover: 7.6	Prevalence index = I	264
Herb Stratum	Prevalence index = I	B/A = <u>2.00 [</u>
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.		<i>n</i>
1. <u>Cal. can. 40 Y FAC 12.</u>	Hydrophytic Vegetatio	n Indicators:
2.(0,0, pa) 10 $0/22$ 13 $$	1.	
3. <u>Fash arv.</u> <u>15</u> <u>FAC</u> 14 4. PoH. Grup <u>3</u> FPK 15.	Dominance Test	
4. <u>Potl. gr </u>		
6 17		daptations ¹ (Provide supporting sor on a separate sheet)
7 18		rophytic Vegetation ¹ (Explain)
8 19 19		
9 20	1	
	be present unless distur	and wetland hydrology must bed or problematic.
Total Herb Cover:		·
FOW stately 255 2004 stately 142	Hydrophytic	
Circular 1/10-ac plot or other plot dimension: 20 XZD % of bare ground:	Vegetation Yes	No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?	
Remarks: Large Pic.gla. located just outsided, plot.		
d		Test etc.

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(Describe to the de	nth neede	d to document t	he indicato	n or confin	n the abser	ice of indicat	(and	Sampling Point #: 536
Soil Matrix	puntoodo						, Argela	C. V. March M. C.
Color (moist)	%	Color (moist)	75		Loc ²	Texture	<u>(pos/</u>	<u>Remarks</u>
	_	Sector and a sector and a	Sectorization				<u>heg)</u>	(or use comment number
104R4/2	80 -	1542.314		·	MPIDI	SKO		
10 ,				·	7			
2,54 4/1					M DI DI		+	······································
			10	<u> </u>	1 <u>- 11 -</u> 8° - An Âl	J		· · · · · · · · · · · · · · · · · · ·
2.54 4/	10		and the second second		and the second	5160	NT	20% platy organ
	·		in the second				,,	<u>200 0 pracy organ</u>
		- 1					· · · ·	
tion, D = Depletion	. RM = Red	uced Matrix. C	S=Coated	Sand Gra	ins ² Locatio	n: PL = Pore	Lining, RC	= Root Channel, M = Matri
		Indicators	for Probl	ematic Hy	dric Soils	•		· · · · · · · · · · · · · · · · · · ·
(A1)	•						 Alaska C	Color Change ⁴ (TA4)
			eted Matri	v (E3)			Alaska A	Alpine Swales (TA5)
ineral soil with chroma	a ≤2)	T.				- 443 · · ·		해외 이 이 방법 영화가 있는 것이다.
		_ <u>N_</u> Red	ox Dark Su	nace (F6)			Di la constante da c	Redox with 2.5Y Hue
	mineral	Dep	eted Dark	Surface (F	7)	<u>_</u>		ed without Hue 5Y or er Underlying Layer
-	· ·	<i>K</i> Red	ox Depress	sions (F8)		ť		ndyl positive (see pg. 91)
		1	-	. ,	`	-1,	8	ow organic matter, low iron, hig
					· · ·		pH, rec	ently developed., see p.91 of
		•						ment; explain in Remarks)
ores (A15)		³ One indic	ator of hyd	rophytic v	egetation, c	one primary in	dicator of v	vetland hydrology, and an
	•	⁴ Give deta	ils of color	change in	Remarks.	esent unless	aistained (n problematic.
esent)					1			
			Jiass: <	and the second				
~						ic Soil Pres	ent?	Yes X No
NIA		Soil Map L			Hydr	ic Soil Pres	ent?	Yes <u> </u>
NIA					Hydr	ic Soil Pres	ent?	Yes <u> </u>
NIA					Hydr	ic Soil Pres	ent?	Yes <u> </u>
	Vea	Soil Map L	Init Name:					
N/A + hydrophyfic		Soil Map L	Init Name:					
t hydroghyfic		Soil Map L	Init Name: landsc	upe-fl	ierefore	problema	etiz indi	whore apply
t hydrophyfic idicators (checkor	nes that ap	Soil Map L	Init Name: landsc	upe-fl	uere fore Secon	probleme	ors (at leas	actors apply 2
+ hydroghyfiz idicators (checkor nyone indicator is	nes that ap	Soil Map L appropriate	Init Name:	upe-fl	secon <u>Secon</u> <u>N</u> v	problema ndary Indicat Vater-Staine	ors (at leas d Leaves (B	actors apply 2
t hydrophyfic idicators (checkor nyone indicator is a	nes that ap sufficient)	Soil Map L <u>a propriate</u> ply, measure f ace Soil Cracks	Init Name: law dyc rom soil si (B6)	<i>upe_fl</i> urface):	secon <u>Secon</u> <u>N</u> v <u>N</u> p	problem ndary Indicat Vater-Staine Prainage Patt	ors (at leas d Leaves (B ems (B10)	actors apply 2
t hydrophyfic dicators (check or ny one indicator is s) (A2) (w/in 12")	nes that ap sufficient) <u>N</u> Surfa	Soil Map L <u>appropriate</u> ply, measure f ace Soil Cracks dation Visible o	Init Name: Ian 250 rom soil si (B6) n Aerial Im	<i>urface</i>): agery (B7	<u>Secon</u> <u>N</u> v <u>N</u> c <u>N</u> c	problem ndary Indicat Vater-Staine Prainage Patt Dxid'd Rhizos Presence of F	ors (at leas d Leaves (B ems (B10) pheres on l Reduced Iro	<u>actors apply</u> <u>it 2 are required</u>) 19) Living Roots (C3) (within 12'
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	Soil Matrix Color (moist) $10 \ YR \ 1/2$ $2.5 \ 4/1$ $2.5 \ 4/1$ ation, D = Depletion s (check ones that I (A1) (A2) (8-16" organics ineral soil with chrome	Soil Matrix Color (moist) % $10 \ YR \ 1/2$ 80 $2.5 \ 4/1$ 80 4 $2.5 \ 4/1$ 80 4 4 4 4 4 4 4 4	Soil MatrixColor (moist)%Color (moist) $10 \forall R \dashv / 2$ 80 $7.5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $7.5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $7.5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 80 $5 \forall R \dashv / 4$ $2.5 \forall \dashv / 1$ 100ation, D = Depletion, RM = Reduced Matrix, C3s (check ones that apply, measure from topIndicatorsI (A1) Λ Depl(A2) (8-16" organics, sat'd, ineral soil with chroma ≤2) μ Reduced (A12) Λ Reduced (A12) Λ Reduced (A13) Λ (A13) Λ (A13) Λ (A14) Ψ veryvores (A15) 3 One indic appropriat 4 Give deta	Soil MatrixRedox FeaColor (moist)% $10 \forall R \dashv / 2$ 90 $7.5 \forall R - 3/4$ 10 $2.5 \forall -4/1$ 80 $7.5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $2.5 \forall -4/1$ 80 $5 \forall R - 4/4$ 10 $7.5 \forall R - 4/4$ 10 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $10, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$ 100 $11, 0 = 0$	Soil MatrixRedox FeaturesColor (moist) $\%$ Type1 $10 \forall R. 4/2$ $\$0$ $7.5 \forall R. 3/4$ 10 c $2.5 \forall 4/1$ $\$0$ $7.5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $= 5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $= 5 \forall R. 4/14$ 10 c $2.5 \forall 4/1$ $\$0$ $= 1000000000000000000000000000000000000$	Soil MatrixRedox FeaturesColor (moist) $\%$ Color (moist) $\%$ Type1Loc2 $10 \ \mbox{$VR$} \ \mbox{$4/7}$ 90 $7.5\ \mbox{$1/8$} \ \mbox{$4/4}$ 10 C $m\ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/14$}$ 10 C $m\ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/8$} \ \mbox{$4/14$}$ $2.5\ \mbox{$4/14$}$ 10 C $m\ \mbox{$4/8$} \ \$	Soil MatrixRedox FeaturesColor (moist)%Color (moist)%Type1Loc2Texture $10 \ \mathbb{{Y}}{R} \ \mathbb{{Y}}{4} \ \mathbb{{Z}}{2}$ $30 \ \mathbb{{Z}}{7} \ \mathbb{{Z}}{7} \ \mathbb{{Z}}{4} \ \mathbb{{Z}}{4} \ \mathbb{{Z}}{4} \ \mathbb{{Z}}{4} \ \mathbf{{Z}}{4} \ \mathb$	Soil MatrixRedox Features α, α dip.Color (moist)%Color (moist)%Type1Loc2Texture[post/neg)10 $\forall R.4/2$ %T.5 $\forall R.4/14/10$ C $M p R c$ $S/L0$ +2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $S/L0$ +2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $S/L0$ +2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $S/L0$ +2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $S/L0$ +2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $M c$ 2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $M c$ 2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ C $M p R c$ $M c$ 2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ $M c$ $M c$ $M c$ 2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ $M c$ $M c$ 2.5 $\forall 4/1$ % $5 \forall R.4/14/10$ $M c$ $M c$ 2.5 $\forall 4/1$ % $M c$ $M c$ $M c$ 2.5 $\forall 4/1$ % $M c$ $M c$ $M c$ 2.5 $\forall 4/1$ %% $M c$ $M c$ (A1)%%% $M c$ (A2)%%% $M c$ (A1)%%% $M c$

PHOTO REPOR	т			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

HOTO REPOR	RT			Marshall Airport an	d Access Road Improveme
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

Direction: NA

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

PHOTO REPOR	Т			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

PHOTO REPOR	RT	_		Marshall Airport ar	nd 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

PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

HOTO REPOR	RT			Marshall Airport a	nd Access Road Improveme
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

Direction: NA

A Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: KUSilva	K CA Date: 9/12/2022
Applicant/Owner: ADDT	Sampling Point #: 542
	IDR Alaska, Inc.
Lat. (dec.°) (61. 973363 Long. 162. 044117 ± 'NAD 83 Recorded of	in GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: (linear/ convex / concave Shape up/downslope: linear/ convex / conve	
Photo nos./descriptions: <u>NESW Soll XZ</u> Camera#:	_ Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: 💆	_ If no, explain.Wetter HGM type:/A
Are Vegetation M_, Soil M, or Hydrology M significantly disturbed? Are "Normal Circu	imstances" present? Yes 🔀 No
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season? Ye	es No 🔀 If needed, explain answers here.
SUMMARY OF FINDINGS	sugar the second second second second
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	and the product of the second states of the second
Hydric Soil Present? Yes No X within a wetland?	
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % cal	n total >100%
	Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. None 5	That are OBL, FACW, or FAC:
2 6	Total Number of Dominant
3 7 7	Species Across All Strata: (B)
4 8 8	
Total Tree Cover:	Percent of Dominant Species 03-3 (A/B)
	That are OBL, FACW, or FAC: Prevalence Index worksheet:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of:Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Sulipul. 20 Y FACW 7.	OBL species X1=
2. Sal. arb, 20 Y FACW 8.	FACW species <u>40</u> X2= <u>80</u>
3. Ros. aci, 30 Y FACUS.	FAC species <u>55</u> X3= <u>165</u>
4. Sal. Jub. 25 4 FAC 10.	FACU species 33 X4=/32
5. <u>Vib.edu.</u> <u>3</u> <u>FACU.11.</u>	UPL + NL species X5=
6 12 12	Column Totals: 128 (A) 377 (B)
Total Sapling/Shrub Cover: <u>98</u>	the state of the second state of the
50% of total cover: <u>49</u> 20% of total cover: <u>19.6</u>	Prevalence Index = B/A = 2.95
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	the second second second second second
1. Calican. 20 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Equiary 10 4 FAC 13	
3 14	Dominance Test is >50% X Prevalence Index is ≤3.0
4 15 15	
6 17	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	
8 19	_/U Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	and the second
10 21 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: <u>50</u>	
50% of total cover: 20% of total cover:	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 10 × 10 % of bare ground:	Vegetation Yes <u>No</u> No
% Coveref Wetland Prephytes % Total Covered Drught to 8	
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable) Remarks:	

All and

	eded to document the indicator or cor	firm the above	nce of indicate	nrs)	, w.m.
·	eded to document the indicator or cor	unn ne abse	ance or indicato		
Depth Horizon <u>Soil Matrix</u>	Redox Features			α,α dip.	na an a
<u>(in.) (opt.) Color (moist) %</u>	Color (moist) <u>%</u> Type	¹ Loc ²	Texture	(pos/	Remarks
6-7 M.				neg)	(or use comment numbe
			· ····		
<u>19 0e</u>					
4-9 A1B 104R4/2 50		- وتعقول	5160	and ²	
10 YR 3/2 50			5160		
1-20 B 2.54 4/1 85	7.54R3/3 15 C.M	A. 1/2	511.0		
	<u>1.0 1/2 //2 // U.M.</u>	marc			
	· · · · · · · · · · · · · · · · · · ·				·
	and and a second se		•		
	real and the second	n An Result	*. 		N. A. C.
¹ Type: C = Concentration, D = Depletion, RM =	Reduced Matrix CS=Coated Sand G	mine ² l costi	n' Pl - Pore		- Poot Chonnol M - Mat
					- Root Channel, M = Mat
Hydric Soil Indicators (check ones that apply,					en e
Standard Indicators:	Indicators for Problematic	Hydric Soils	3:		
Mistosol or Histel (A1)	Depleted Below Dark \$	Surface (A11)	N. N.	_ Alaska C	olor Change ⁴ (TA4)
Histic Epipedon (A2) (8-16" organics, sat'd,				_	lpine Swales (TA5)
underlain by mineral soil with chroma ≤2)	Depleted Matrix (F3)			Alaana A	ihitie owales (143)
Black Histic (A3)	Redox Dark Surface (F	6)		_Alaska R	edox with 2.5Y Hue 🛒
Hydrogen Sulfide (A4) (within 12" of mineral		(57)		AK Glove	ed without Hue 5Y or
surface; @" in this pit	Depleted Dark Surface) (E7)			er Underlying Layer
Thick Dark Surface (A12)	Redox Depressions (F	8)			idyl positive (see pg. 91)
	and the second				,
Alaska Gleyed (A13)	Red Parent Material (F	21)			w organic matter, low iron, hi ently developed., see p.91 of
Alaska Redox (A14)	Very Shallow Dark Sur	face (F22)		Suppler	nent; explain in Remarks)
Alaska Gleyed Pores (A15)					. ,
Alaska Gleyeu Poles (A15)	³ One indicator of hydrophyti appropriate landscape posit	on must be n	one primary inc	licatorotw	etiand hydrology, and an
이 방법 수요	⁴ Give details of color change	in Remarks	iesent unicss (ilaturbeu O	r problematic.
Restrictive Layer (if present)					
A 1 .	Drainage Class: SPD				No. V.
Type: Nm	Soil Map Unit Name:	Hyd	ric Soil Prese	ent?	Yes No
Depth (inches): <u>N/19</u>	-				
Comments:	1 ^				
1. Profile moist but not Satura	tell.				
1. Probile moist but not Satura	tell.				
1. Profile moist but not Satura	tic indicators			1	
1. police moist but not satura 2. 3. No. 1" hydro for problemat	tic indicators		· · · · ·	an a	
1. police moist but not satura 2. 3. No 1" hydro Gr problemat YDROLOGY	his indicators				2 one provide al l
1. profile moist but not Saturn 2. 3. No. 1" hydro for problemat YDROLOGY Wetland Hydrology Indicators (check ones the	his indicators at apply, measure from soil surface)		•		2 are required)
1. proceil moist but not Saturn 2. No. 1° h, dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones the Primary Indicators (any one indicator is sufficie	hiz indicators at apply, measure from soil surfac e) ant)	\underline{N}	Nater-Stained	Le aves (B	
1. proCity moist but not Saturn 2. No. 1° h, dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient M Surface Water (A1)	hiz in fice fors at apply, measure from soil surfac e) ant) Surface Soil Cracks (B6)	<u>N</u> V <u>N</u> I	•	Le aves (B	
1. proCity moist but not Saturn 2. No. 1° h, dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient M Surface Water (A1)	hiz indicators at apply, measure from soil surfac e) ant)	<u>N</u> V <u>N</u> I	Water-Stained Drainage Patte	Leaves (B ms (B10)_	
1. profile moist but not Saturn 2. No. 1" hadro for problemat YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficie <u>M</u> Surface Water (A1) <u>M</u> High Water Table (A2) (w/in 12") <u>M</u>	hiz Mira fors at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I	<u>かい</u> (2013) (2	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re	Leaves (B ms (B10) heres on L duced Iro	9)
1. proceeding works but not Saturn 2. No. 1° h. dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones the Primary Indicators (any one indicator is sufficient $\frac{1}{2}$ Surface Water (A1) $\frac{1}{2}$ High Water Table (A2) (w/in 12") $\frac{1}{2}$ Saturation (A3) (w/in 12") $\frac{1}{2}$	hiz Mica fors at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I Sparsely Vegetated Concave Surface	37) (B8) √ 1 √ 1 √ 1 √ 1 √ 1 √ 1 √ 1 √	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. α,α or so	Leaves (B ms (B10) heres on L duced Iron I color chan	9)
1. profile moist but not Saturn 2. 3. No. 1" h dry Gr problemat Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient $\frac{10}{2}$ Surface Water (A1) $\frac{10}{2}$ High Water Table (A2) (w/in 12") $\frac{10}{2}$ Saturation (A3) (w/in 12") $\frac{10}{2}$ Water Marks (B1)	hiz Mira fors at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I	37) (B8) √ 1 √ 1 √ 1 √ 1 √ 1 √ 1 √ 1 √	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re	Leaves (B ms (B10) heres on L duced Iron I color chan	9)
1. profile moist but not Saturn 2. No. 1" h dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient $\frac{1}{2}$ Surface Water (A1) $\frac{1}{2}$ High Water Table (A2) (w/in 12") $\frac{1}{2}$ Saturation (A3) (w/in 12") $\frac{1}{2}$ Water Marks (B1) $\frac{1}{2}$ Mater Marks (B1)	hiz Mica fors at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I Sparsely Vegetated Concave Surface	(B8)	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. α,α or so	Leaves (B ms (B10)_ heres on L duced Iron I color chan C5)	9)
1. profile moist but not Saturn 2. No. 1" h dro Gr problemat YDROLOGY Wetland Hydrology Indicators (check ones the Primary Indicators (any one indicator is sufficie $\frac{10}{5}$ Surface Water (A1) $\frac{10}{5}$ High Water Table (A2) (w/in 12") $\frac{10}{5}$ Mater Marks (B1) $\frac{10}{5}$ Sediment Deposits (B2) $\frac{10}{5}$ Mater Marks (B1)	At apply, measure from soil surface) at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I Sparsely Vegetated Concave Surface Marl Deposits (B15) Hydrogen Sulfide Odor (C1)	$(B8) \qquad \underbrace{N}_{N} (C C C C C C C C C C C C C C C C C C C$	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (f Stunted or Stree	Leaves (B ms (B10) heres on L duced Iron I color chan C5) ssed Plan	9)
1. profile moist but not Saturn 2. No. 1" h. Los Gor problemat Wetland Hydrology Indicators (check ones that Primary Indicators (any one indicator is sufficient $\frac{10}{2}$ Surface Water (A1) $\frac{10}{2}$ Sufface Water Table (A2) (w/in 12") $\frac{10}{2}$ In $\frac{10}{2}$ Saturation (A3) (w/in 12") $\frac{10}{2}$ Saturation (W/in 12") $\frac{10}{2}$ Sat	he indicators at apply, measure from soil surface) ant) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (I Sparsely Vegetated Concave Surface Marl Deposits (B15)	87) (B8)	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. α,α or so Salt Deposits (Stunted or Stre Geomorphic Po	Leaves (B ms (B10) heres on L duced Irou color chan C5) ssed Plan osition (D2)	9)
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PHOTO REPOR	T			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM	- Alaska Region
Project: Marshall Airport Borough/City: Kusilva	K CA Date: 9/12/2022
Applicant/Owner: ADOT	Sampling Point #: 543
7.11.10.	HDR Alaska, Inc.
Lat. (dec. °)/01. 873549 Long. 162. 044669 ± 'NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	
Local relief: Shape across slope:/linear/ convex/concave Shape up/downslope: /linear/	
Photo nos./descriptions:Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circ	
Are Vegetation $\overline{\mathcal{N}}$, Soil $\overline{\mathcal{N}}$, or Hydrology $\overline{\mathcal{N}}$ naturally problematic? In Dry Season? Y	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No	- NEW -
Hydric Soil Present? Yes No Is the sampled an within a wetland	
Wetland Hydrology Present? Yes No	? Yes No Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	In total >100%. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. 6 nc	Number of Dominant Species That are OBL, FACW, or FAC:(A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8 8	W is
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: 100 (VB) Prevalence Index worksheet:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
2.Betinan, 35 Y FAC 8.	FACW species 31 X2= 62
3. VAC. Uli. 15 FAC 9.	FAC species 88 x3= 264
4. Prc. 5 FACUNIO.	FACU species <u>5</u> X4= <u>20</u>
5 11	UPL + NL species X5= -
6 12	Column Totals: 134 (A) 356 (B)
Total Sapling/Shrub Cover: 80	······································
50% of total cover: 40 20% of total cover: 16	Prevalence Index = B/A = 2.66
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	republic of the state of the state of the
1. Cal. can. 20 Y FAC 12	Hydrophytic Vegetation Indicators:
2. Pet. Li. 3 FACW13	
3. Com. pal. 5 OBL 14	Dominance Test is >50% ✓ Prevalence Index is ≤3.0
4. Equiary 15 Y FAC 15.	
5. Pot. acu. 3 FAC 16	Morphological Adaptations ¹ (Provide supporting
7. Cor. agu. 5 OBL 18	data in Remarks or on a separate sheet)
819	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: <u>54</u>	
50% of total cover: <u>27</u> 20% of total cover: <u>0.8</u>	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 15×15 % of bare ground:	Vegetation Yes No No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?
Remarks:	

epth Horizon Soil Matri in.) (opt.) Color (moist) -8 Oe	x %	Color (moist)	edox Fea <u>%</u>	atures Type ¹	Loc ²	Taudata	a,a dip. (pos/	Bomodra	
-8 De		Stanta B	<u>%</u>	Type ¹	1002	Tautum	(pos/	Domotio	
	80	a lall.		1100	LUC	Texture	neg)	<u>Remarks</u> (or use comment numbe	
		542 4/4	20	С	M.PL.R	SILO	NT		
	the second								
	_					<u></u>			
	-				—				
	X	<u> </u>				pr <u>ating in the second second</u>		the straight stud	
ype: C = Concentration, D = Depletio dric Soil Indicators (check ones the								= Root Channel, M = Mat	
andard Indicators:	at apply, ii	Indicators f):	4	
Histosol or Histel (A1)				w Dark Su	And the second second second	A.	Alaska C	olor Change ⁴ (TA4)	
Histic Epipedon (A2) (8-16" organi underlain by mineral soil with chro		41	ed Matri			A	1	lpine Swales (TA5)	
Black Histic (A3)	0	N Redox	Dark Su	Inface (F6)		A	Alaska R	edox with 2.5Y Hue	
Hydrogen Sulfide (A4) (within 12" surface; "in this pit	ofmineral	.1		Surface (· · /		ed without Hue 5Y or er Underlying Layer	
Thick Dark Surface (A12)		Redox	Depres	sions (F8)		N	1	idyl positive (see pg. 91)	
J_Alaska Gleyed (A13)				iterial (F2*		N	pH, rece	w organic matter, low iron, h ently developed., see p.91 of	
Alaska Redox (A14)				ark Surfa			0.0	ment; explain in Remarks)	
V Alaska Gleyed Pores (A15)		³One indicat appropriate ⁴ Give details	andsca	pe position	n must be	present unless	dicator of w disturbed o	etland hydrology, and an r problematic.	
strictive Layer (if present)		Drainage Cla	ass: PI	>	-		1. The Part of the		
Type: Nonl		Soil Map Uni	it Name:		H	dric Soil Pres	ent?	Yes Ko	
Depth (inches): N/A	- California				14		1		
mments: Would also meet AKRee	Jox 2.	54 Hoe if p	roble	matic			5+		
ROLOGY	inter 25	100			10.03			and the second sec	
atland Hydrology Indicators (check			m soil s	urface):	Se	condary Indicat	ors (at least	2 are required)	
mary Indicators (any one indicator is	sufficient	<u>t)</u>			N	Water-Stainer	d Leaves (B	9)	
Surface Water (A1)	1	rface Soil Cracks (B			N			Self- Contraction of the	
High Water Table (A2) (w/in 12")		Indation Visible on A			Ter	Oxid'd Rhizos Presence of R		iving Roots (C3) (within 12	
Saturation (A3) (w/in 12")	A REAL PROPERTY AND	arsely Vegetated C	oncave	Surface (B	8) _//	(pos. a,a or se			
_Water Marks (B1)		rl Deposits (B15)			N	Salt Deposits	(C5)		
_Sediment Deposits (B2)		drogen Sulfide Odo			11.5	N Stunted or Stressed Plants (D1)			
_ Drift Deposits (B3)	N Dry	-Season Water Tal neral, 12"-40" organic	ble (C2)	(w/in 12"-2		🕂 Geomorphic Position (D2)			
Algal Mat or Crust (B4)	and the second	her (explain)			N	A/ Shallow Aquitard (D3) (w/in 24", can perch H ₂ O w/in 12")			
Iron Deposits (B5)		(×	Microtopograp	ohic Relief (E	D4) (caused by water)	
d Observations (in. from ground surfa	ace).	the second second			17	FAC Neutral T	est (D5)		
face Water Present? Yes \times	No	Depth of wat	er (in)	2"- in f	w low's	pots.			
ter Table Present? Yes X	No			5	197	1.00			
A A A A A A A A A A A A A A A A A A A	and the second	nat depth but not ye		3					
suration Present? Yes $\underline{\times}$	No	Depth to sat.			14/-	tland Hydrolog	Property	Yes X No	
ludes capillary fringe)	NO	and the second se	Unkno	and the second se	vve	uanu nyuroiog	y resent	Tes NO	
scribe Recorded Data (stream gauge,	monitorin				ions), if a	vailable:			
(Stroutingadgo)		a non, aona priotos	1 1010	_o nopool		anabio.		- A PARTY AND A PARTY AND A	
narks:		-014 C	8.76				1011-		

A.C.

A State

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						

Direction: NA

NA Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

HOTO REPOR	RT			Marshall Airport a	nd Access Road Improveme
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

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: Kusilva	KCA Date: 9/12/2022
Applicant/Owner: <u>ADD T</u>	Sampling Point #: 545
	HDR Alaska, Inc.
Lat. (dec.°) 61.844949 Long. 162.046315 ± 'NAD 83 Recorded c	on GPS?: X Marked on map? M Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: (linear / convex / concave Shape up/downslope: linear / convex / concave Shape u	convex/concave NWI classification: PS53/1R
Photo nos./descriptions: NEShi - 250, Camera#:	_ Veg Type (Viereck Level 4 or other): ZC Za
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: $ earrow one note that the second secon$	If no, explain. Wetter HGM type: Stope
Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circu	
Are Vegetation M, Soil M, or Hydrology M naturally problematic? In Dry Season? Ye	es <u>No </u> If needed, explain answers here.
SUMMARY OF FINDINGS	a statement a fig. was seen
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled are	a substantia (substant, sump) a interference substant
Hydric Soil Present? Yes <u>No</u> within a wetland?	
Wetland Hydrology Present? Yes Ves No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can	
<u>Tree Stratum</u> (dbh≥ 3″)	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Nonl 5	That are OBL, FACW, or FAC:(A)
2 6	Total Number of Dominant
	Species Across All Strata:(B)
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: / OV (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
1. Rho. tom. 25 Y FACW 7. Pic. gla FACU	FACW species 36 $x_2 = 72$
2. Vac. w, F. 15 Y EAC 8.	FAC species 55 $x_3 = 165$
3. Vac. 11. 10 FAC 9	FACU species / X4= · 4
5. Sal. pvl, 3 FACW11.	
6. Emp. nin. 5 FAC 12	07 7.11
Total Sapling/Shrub Cover: 69	Column Totals: <u>92</u> (A) <u>29</u> (B)
50% of total cover: 34,5 20% of total cover: 13,8	Prevalence Index = B/A = 2.62
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Numerous and a second s
1. Car. big, 15 Y FAC 12.	Hydrophytic Vegetation Indicators:
2 Rub, cha. 5 Y FACW 13	V
3. Eri-vac. 3 FACW14.	Dominance Test is >50% Prevalence Index is ≤3.0
4 15 15	4/
6 17 2	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22 22	be present unless disturbed of problematic.
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:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks:	
Lichen, 25°/0	

SOIL				anda ann i an i						Sampling Point #: <u>545</u>
Profile L	Description	: (Describe to the de	eptn needed t	to document the	e indicato	ororcontil	m the a	bsence of indicate	ors)	
Depth	Depth Honzon <u>Soil Matrix</u> Redox Features								α,α dip.	
<u>(in.)</u>	(opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc	² Texture	(pos/	Remarks
0-7	oi				_				neg)	(or use comment number)
2-6	De									······································
1 17	DE	sial.	-9	n sele	~~~~			0 010		
6-12	<u> </u>	<u>N7/1</u>	12 54	rr 44	25	<u> </u>	MPLN	RC SILD	+	
			<u> </u>					_		
								_		:
	et ;		, ^j b	· .						· · · · · · · · · · · · · · · · · · ·
			x 5							4
					-			-		
	Concent		RM = Redu	ced Matrix CS=	- <u></u>	Sand Gr		- DI - Bore	Lining PC	= Root Channel, M = Matrix
		ors (check ones that								- Root Channel, M - Mathx
	dIndicators		·	Indicators f					•	
	stosol or Hist			a		w Dark Su	-		Alaska C	color Change ⁴ (TA4)
		n (A2) (8-16" organic	e estid	· · · · ·			mace (A		4	
<u></u> , iiia		mineral soil with chron		_//_Deplet	ted Matri	x (F3)		A L	Alaska A	lpine Swales (TA5)
NBla	ack Histic (A3		,	A) Redox	Dark Su	ırface (F6)	N	Alaska R	edox with 2.5Y Hue
10 1.500		ide (A4) (within 12"of	mineral	1		and in the			2	ed without Hue 5Y or
		" in this pit		Deplet	ted Dark	Surface (F7)		Redd	er Underlying Layer
\mathcal{N}_{Th}	ick Dark Sur	face (A12)			Depres	sions (F8)).	a	_α,α-dipyr	ndyl positive (see pg. 91)
A / A1a	aska Gleyed	(413)		N_Red Pa	aront Ma	tonal (E2)	4.	i A	/ Other (Lo	w organic matter, low iron, high
								·	pH, rec	ently developed., see p.91 of
	aska Redox	(A14)		<u> </u>				•		ment; explain in Remarks)
<u>_h)</u> Ala	aska Gleyed	Pores (A15)		³ One indicat	orofhyd	lrophyticv	/egetati	on, one primary in	dicatorofw	etland hydrology, and an
				appropnate ⁴ Give details	landscap s of color	pe positio change i	n mustb n Remai	e present unless rks.	disturbedo	or problematic.
Restrictiv	ve Layer (if p	resent)		Drainage Cla			T			
Type:		•		Soil Map Uni		~		Hydric Soil Pres	n#2	Yes <u>/ No</u>
Depth	(inches):	1			it indifie.			nyunc son ries	51117	Yes <u> </u>
· · ·		10 / 1-3					ľ			at system of the second s
Commen 1.	nts:	2010 - 144 - 15 2010 - 14								and the second second
2	t sé.			_						
3. Wost	a meet t	=3+22ifp	roblemat	il,						Sec. 1.
HYDROL	OGY	. V								i de la compañía de la
		Indicators (check o	nes that anni	v measurefro	meoile	urface).		econdary Indicate	ore (at least	t 2 are required)
		(any one indicator is		y, measure no	3013	unace).		Water-Stained		
. 1				a Dail Creaka (D					•	5)
	ace Water (/	e (A2) (w/in 12")		e Soil Cracks (B			7	Drainage Patte		
				ation Visible on A						iving Roots (C3) (within 12")
Satu	ration (A3) ((w/in 12")	_ <u>/</u> ∕ Sparse	ely Vegetated C	Concave	Surface (E	38) —	/ Presence of R (pos. α,α or so	il color chan	n (C4) ge w/in 12")
<u>_∧</u> _Wate	er Marks (B1) .	📈 Marl De	eposits (B15)				✓ Salt Deposits (C5)	.
N Sedi	iment Depos	sits (B2)	∕V Hydrog	jen Sulfide Odo	or (C1)			V Stunted or Str	essed Plan	ts (D1)
	•	. ,		, ason Water Tai	. ,	(w/in 12"-2) tol slopel and
<u>∧</u> Dmt	Deposits (B	3)	mineral	l, 12"-40" organic)	(Shallow Aquita		
Alga	I Mator Crus	st (B4)	<u>∧</u>) Other (explain)			- <i>L</i>	(w/in 24" con n	arch H.O.w/	in 12")
N Iron	Deposits (B	5)						Microtopograp	hic Relief (l	D4) (caused by water)
		-,					4	FAC Neutral Te	est (D5)	
Field Obs	servations (ii	n. from ground surfa	ce):					F		
	Water Prese	-	· · ·	Depth of wat	ter(in.)				<i>e</i>	
	ble Present		No X	Depth to wat						
	_			lepth but not ye						V
	n Present?		No	Depth to sat.			W	etland Hydrolog	y Present	? Yes <u>X</u> No
•	capillary frin	• ·		Epi Endo			ĺ			
Describe	Recorded D	ata (stream gauge,	monitoring we	ell, aenal photo	s, previo	us inspec	tions), if	available:		
Pomorico	•									
Remarks:	•									

PHOTO REPOR	PHOTO REPORT Marshall Airport and Access Road Improvement										
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						

Direction: NA

NA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Airport Borough/City: Kusilya	
Applicant/Owner	Sampling Point#:54/
Investigator(s): 714/BC Firm:	
Lat. (dec. °) 6 1. 8 74 672 Long. 162.045784 ± ' NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landf	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	convex / concave NWI classification:
Photo nos./descriptions: <u>NESW 2-50 il</u> Camera#:	_ Veg Type (Viereck Level 4 or other): <u></u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation $\frac{M}{M}$, Soil $\frac{M}{M}$, or Hydrology $\frac{M}{M}$ significantly disturbed? Are "Normal Circu	
Are Vegetation \mathcal{N} , Soil \mathcal{N} , or Hydrology \mathcal{N} naturally problematic? In Dry Season? Y	esNo $\underline{\times}$ If needed, explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No Is the sampled and	a
Hydric Soil Present? Yes No X within a wetland	
Wetland Hydrology Present? Yes No A	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total>100%. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1.	Number of Dominant Species(A)
2.5 <u>no 10</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u>	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	(~)
Total Tree Cover:	Percent of Dominant Species
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC:(A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	- Carlos - C
1. Spi. ste, 15 Y FACU 7.	OBL species X1=
2. Vib. edu. 3 FACU 8	FACW species X2=
3 Vac. uli 7 FAC 9.	FAC species $1/6$ $x_3 = 348$
4 Sal. heb. 40 Y FAC 10	FACU species X4=
5. <u>Aln.ten 10</u> <u><i>H</i>AC11.</u> 6. 12.	UPL + NL species X5=
	Column Totals: <u>135</u> (A) <u>422</u> (B)
Total Sapling/Shrub Cover: <u>75</u> 50% of total cover: <u>37,5</u> 20% of total cover: 15	Prevalence Index = $B/A = 3.13$
	Prevalence Index = B/A =/ S
Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. <u>Cal. can. 20</u> Y EAC 12	
2. Polacy. 7 FAC 13	Hydrophytic Vegetation Indicators:
3. Equ. arv. 20 Y PAK 14	Dominance Test is >50%
4. Aco. del. 5 FAC 15	_ <u></u> Prevalence Index is ≤3.0
5. <u>Rub.arc.</u> 7 FAC 16 6. Cal. tribi. 1 FACW17.	_//_ Morphological Adaptations ¹ (Provide supporting
	data in Remarks or on a separate sheet)
7 18 8 19	<u> </u>
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 60	
50% of total cover: $\underline{20}$ 20% of total cover: $\underline{12}$	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	

			· · ·						Sampling Point	#: <u>996</u>
Profile Description						n the a bse			• • • • • • • •	4.
Depth Horizon	<u>Soil Matrix</u>	<u> </u>	Re	edox Fea	tures		すがいや	u,u uip.	i en	
(in.) (opt.) Color (moist) <u>%</u> Color (moist) <u>%</u> Type ¹							Texture	(pos/ neg)	<u>Remai</u> (or use comme	
2-3 <u>Oi</u>					•			<u>noat</u>	to, ase comme	
-14 PT	104R3/1	100	ántio-		,per		SKO			
1-21 B	2.54 4/1	85 5	54R 314	15	C	M,PL,RC	5120	æ		
		<u> </u>	· · · · ·			##-				
		<u></u>								
				. —						
							······································			
Type: C = Concen	tration, D = Depletion		uced Matrix CS=	Coated	Sand Cmi		n: DI = Dom	Lining PC	- Boot Channel	M = Matrix
	ors (check ones that								- Root Ghannel,	
standard Indicator	· · · · · · · · · · · · · · · · · · ·	nappiy, mea	Indicators fo		-		,	•		
✓ Histosol or His					· · · · · · ·	face (A11)		Alaska Co	olor Change ⁴ (TA	4)
	n (A2) (8-16" organic	s,sat′d.					· · · · · · · · · · · · · · · · · · ·		· · · · ·	•
	mineral soil with chron		Deplet	ed Matriv	(F3)		. +	_ Alaska Al	pine Swales (TA	5)
Black Histic (A	,	2	Redox	Dark Su	rface (F6)			_ Alaska Re	dox with 2.5Y H	ue
Hydrogen Sulf	ide (A4) (within 12"o	fmineral	Deplet	ed Dark S	Surface (F	7)		_AK Gleye	d without Hue 5	for
surface; @	·				· ·		- Star	- 000 x - 000	r Underlying Lay	
Thick Dark Su			Redox	uepress	sions (F8)		General Contract of Contract o	the second s	dyl positive (see	
Alaska Gleyed	(A13)).	Red Pa	arent Mai	tenal (F21)		Other (Lov	w organic matter, lo ntly developed., se	owiron, high
Alaska Redox	(A14)		Very SI	hallow D	ark Surfac	e (F22)		Supplem	ient; explain in Rer	narks)
Alaska Gleyed	Pores (A15)		³ One indicato	orofhydi	rophytic ve	egetation, o	one primary in	dicatorofwe	etland hydrology	, and an
			appropriate l	andscap	e position	must be pr	esent unless	disturbedor	problematic.	
Restrictive Layer (if p	vrecent)		⁴ Give details			rkemarks.				
Type: <u></u>			Drainage Cla		ND					\sim
Depth (inches):	NIA		Soil Map Unit	uname:		Нуа	ric Soil Prese	entr	Yes N	o <u>X</u>
No primos	hydro in	dirato	is for p	roble	mahi	ic Soi	1 Indie	ators,	<u>, 1988</u>	en la
DROLOGY			/						2 E.	2 (
	Indicators (check of		ly, measur e from	n soil si	urface):	<u>Seco</u>	ndary Indicate	ors (at least	2 are required)	
nmary Indicators	(any one indicator is	sufficient)				<u>v_</u>	Vater-Stained	Leaves (B9))	
🖳 Surface Water (ce Soil Cracks (B	· · ·			rainage Patte	ems (B10)_		
$\frac{\mathcal{J}}{\mathcal{L}}$ High Water Tab	e (A2) (w/in 12")	<u> </u>	ation Visible on A	enal Ima	agery (B7)				iving Roots (C3)	(within 12")
$\frac{V}{2}$ Saturation (A3)	(w/in 12")	$\frac{1}{2}$ Spars	ely Vegetated Co	oncave S	Surface (B	B) 📈 F	resence of Re (pos. a, a or so	educed iron	i (C4)	
U Water Marks (B1)	N Marl D	eposits (B15)				alt Deposits (e w/m (2)	
J Sediment Depo:	sits (B2)	1.24	gen Sulfide Odo	r (C1)			itunted or Stre		s (D1)	
 ┘ Drift Deposits (B		∧ Dry-Se	ason Water Tat	ole (C2) (w/in 12"-24		eomorphic P			
1	•	minera	al, 12"-40" organic)			<u>_//</u> s	hallow Aquita	rd (D3)		•
✓ Algal Mat or Cru	•	<u>_/</u> ∨ Other	(explain)				w/in 24", can pe			
🕖 Iron Deposits (B	5)						್ಷಗಳು ಮೊದಲು ಗಿಂಗ	•	4) (caused by wa	ter)
						<u>//</u> F	AC Neutral Te	est (D5)		·
ieid Observations (j	n. from ground surfa	· · · · ·	D	C *						
	·	No <u>×</u>	Depth of wat					:		
urface Water Prese		No <u>X</u>	Depth to wate						P.	
Surface Water Prese				t filled?		1				1.
Surface Water Prese Vater Table Present	Seep	ing in at that								
Surface Water Prese Vater Table Present Saturation Present?	Seep Yes_X_	ing in at that No	Depth to sat.	(in.)/	8	Wetla	nd Hydrolog	y Present?	Yes I	No <u>X</u>
Surface Water Prese Vater Table Present Saturation Present? ncludes capillary frir	Seep Yes <u>X</u> ge)	No [*]	Depth to sat. Epi Endo	(in.)/ Unknov	<u>8</u> wn			y Present?	Yes !	No <u>X_</u>
urface Water Prese Vater Table Present aturation Present? ncludes capillary frir	Seep Yes_X_	No [*]	Depth to sat. Epi Endo	(in.)/ Unknov	<u>8</u> wn			y Present?	Yes !	10 <u>×</u>
urface Water Prese Vater Table Present aturation Present? ncludes capillary frir escribe Recorded D emarks:	Seep Yes <u>X</u> ge) vata (stream gauge,	No	Depth to sat. Epi Endo rell, aerial photos	(in.) _/ Unknov s, previou	<u>8</u> wn us inspecti	ons), if ava	ilable:	· · · · · · · · · · · · · · · · · · ·	Yes !	40 <u>X</u>
urface Water Prese Vater Table Present aturation Present? ncludes capillary frir escribe Recorded D emarks:	Seep Yes <u>X</u> ge)	No	Depth to sat. Epi Endo rell, aerial photos	(in.) _/ Unknov s, previou	<u>8</u> wn us inspecti	ons), if ava	ilable:	· · · · · · · · · · · · · · · · · · ·	Yes 1	4o <u>X_</u>

• • •

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PHOTO REPOR	RT			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation

HOTO REPOR	RT			Marshall Airport a	nd Access Road Improveme
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

Direction: NA

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

PHOTO REPOR	т			Marshall Airport a	nd 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

PHOTO REPOR	T			Marshall Airport a	nd 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

Direction: NA

Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: MARSHALL AIRPORT Borough/City: KJS/1/4	k CA Date: 9/14
Applicant/Owner: ADOT	Sampling Point #: 585
Investigator(s): <u>ZH</u> /BC Firm:	HDR Alaska, Inc.
Lat. (dec. °) (01. 876087 Long. 162.055919 ± 'NAD 83 Recorded	on GPS?: X Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	orm: Millsill Slope (%): 10 Aspect:SE
Local relief: Shape across slope; linear/ convex / concave Shape up/downslope: linear/	convex/concave NWI classification: P351/38
Photo nos./descriptions: NESW 2-SoilCamera#:	Veg Type (Viereck Level 4 or other): 77-702
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. we there HGM type: Shope
Are Vegetation 2, Soil 1, or Hydrology significantly disturbed? Are "Normal Circu	umstances" present? Yes X No
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> naturally problematic? In Dry Season? Ye	esNo If needed, explain answers here.
SUMMARY OF FINDINGS	and the conversion of the second of the second
Hydrophytic Vegetation Present? Yes <u>No</u> Is the sampled and	and and a single state of the second state of the
Hydric Soil Present? Yes No within a wetland	Yes No
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. None 5	That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8	
Total Tree Cover:	Percent of Dominant Species
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Kho, tim, 35 Y FACW 7.	OBL species X1=
2. Van Uli, ZO Y FAC 8.	FACW species 35 $x_2 = 70$
3. Emp. nig. 20 Y tAC 9	FAC species (65) $x_3 = 195$
4. Betinan? 10 FAC 10	FACU species <u>7</u> X4= <u>28</u>
5. Jal. artc. 7 Preu11	UPL + NL species X5=
	Column Totals: <u>122</u> (A) <u>308</u> (B)
Total Sapling/Shrub Cover: 92 50% of total cover: 46 20% of total cover: 18.4	757
Herb Stratum	Prevalence Index = $B/A = 2.52$
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	second K - the second second second
1. Car. blg. 15 Y FAC 12.	
2. Car. agu. 15 Y OBL 13.	Hydrophytic Vegetation Indicators:
3 14	Dominance Test is >50%
4 15 15	Prevalence Index is ≤3.0
5 16 17	Morphological Adaptations ¹ (Provide supporting
6 17 17 18	data in Remarks or on a separate sheet)
7 18 8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 30	
50% of total cover: 20% of total cover:	Hydrophytic
Circular 1/10-ac plot or other plot dimension: 20 y 20 % of bare ground:	Vegetation Yes <u>No</u> No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?
Remarks: Liden 10%	

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(in.) (opt.) Color (moist) % Color (moist) $\bigcirc -7$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $2-3$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $\bigcirc \iota$ $3-8$ B_+ $54.4/1$ $\bigcirc v$ \neg \neg $8-10$ B_2 $54.4/1$ $@ 55$ $7.5710.4/10$ \square $16-20$ B_3 $1040.4/3$ 95 $7.5710.4/10$ \square $16-20$ B_3 $1040.4/3$ 95 $7.5710.4/10$ \square $16-20$ B_3 $1040.44/3$ 95 $7.5710.4/10$ \square 17 $Dyperimentation D = Depletion, RM = Reduced Matrix, CS = Coas \square \square 17 Piptic Soil Indicators (check ones that apply, measure from top of min \square \square \square \square$	xx Features % Type1	Loc ² Texture SrCo PL SILO	a, α dip. (pos/ <u>Remarks</u> neg) (or use comment nu + NT
(in.) (opt.) Color (moist) % Color (moist) $O-7$ $O\iota$ $O\iota$ $O\iota$ $O\iota$ $O\iota$ $2-3$ Oe Oe Oe Oe Oe Oe $3-8$ B_{+} $54.41/1$ Oe Oe Oe Oe $3-16$ B_{2} Oe Oe Oe Oe Oe Oe M_{-20} B_{2} Oe Oe Oe Oe Oe Oe M_{-20} B_{2} Oe Oe Oe Oe Oe Oe M_{-20} B_{2} Oe Oe Oe Oe Oe M_{-20} B_{2} Oe Oe Oe Oe Oe M_{-20} <th>% Type¹</th> <th>$\frac{L_{0}c^{2}}{-} \frac{\text{Texture}}{SIL0}$</th> <th>(pos/ Remarks</th>	% Type ¹	$\frac{L_{0}c^{2}}{-} \frac{\text{Texture}}{SIL0}$	(pos/ Remarks
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		- Srco PL Sico	
$\frac{3-9}{8-16} = \frac{5}{7} + \frac{5}{7} + \frac{1}{16} = \frac{1}{95} = \frac{5}{7} + \frac{1}{7} + \frac{1}{96} = 1$	<u>5</u> 	- Srco PL, RC SILO PL SILO	+ + NT
-8 -8 $544/1$ 60 -16 B_2 $544/1$ 85 $7.5184/0$ 12 $2-20$ B_2 $10484/3$ 95 $2.545/1$ 12 Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coat Hydric Soil Indicators (check ones that apply, measure from top of ministandard Indicators: Indicators for P M Histosol or Histel (A1) M Depleted E M Histic Epipedon (A2) (8-16" organics, sat'd, for the set of the	<u>5</u> 	- SILD PL SILD PL SILD	+ +
2-20 B3 104R4/3 95 2.5Y \$1/1 Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coat Hydric Soil Indicators (check ones that apply, measure from top of ministandard Indicators: Indicators: Indicators for P Histosol or Histel (A1) Histic Epipedon (A2) (8-16" organics, sat'd,	<u>5</u> 	PL SILO	+
2-20 B3 104R4/3 95 2.5Y \$1/1 Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coat Hydric Soil Indicators (check ones that apply, measure from top of ministandard Indicators: Indicators: Indicators for P Histosol or Histel (A1) Histic Epipedon (A2) (8-16" organics, sat'd,	<u>5</u> 	<u>PL</u> <u>SILO</u>	+
Hydric Soil Indicators (check ones that apply, measure from top of ministrandard Indicators: Indicators for P M Histosol or Histel (A1) M M Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted E	2 D	PL SILO	NT
Hydric Soil Indicators (check ones that apply, measure from top of ministrandard Indicators: Indicators for P M Histosol or Histel (A1) M M Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted E	ated Sand Grains	<u>iocumber provinciana</u> n	
Hydric Soil Indicators (check ones that apply, measure from top of ministrandard Indicators: Indicators for P M Histosol or Histel (A1) M M Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted E	ated Sand Grains		
Hydric Soil Indicators (check ones that apply, measure from top of mill Standard Indicators: Indicators for P M Histosol or Histel (A1) M Depleted E Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted E	ated Sand Grains		A CARGE OF
Hydric Soil Indicators (check ones that apply, measure from top of ministrandard Indicators: Indicators for P M Histosol or Histel (A1) M M Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted E	ated Sand Grains	21 5 51 5	
Standard Indicators: Indicators for P M Histosol or Histel (A1) M Depleted E Histic Epipedon (A2) (8-16" organics, sat'd,			
M Histosol or Histel (A1) M Depleted E M Histic Epipedon (A2) (8-16" organics, sat'd, 4 (Depleted A)			•
M Histic Epipedon (A2) (8-16" organics, sat'd,	Below Dark Surfac		Alaska Color Change ⁴ (TA4)
		T A	Alaska Alpine Swales (TA5)
and han by milerarson with another sz)		A CONTRACT	
	rk Surface (F6)	1	Alaska Redox with 2.5Y Hue
Hydrogen Sulfide (A4) (within 12" of mineral surface; @ " in this pit Depleted D	Dark Surface (F7)	4	AK Gleyed without Hue 5Y or Redder Underlying Laver
	pressions (F8)	٨	α, α -dipyridyl positive (see pg. 9
1	nt Material (F21)	A	Other (Low organic matter, low in
Sand Street	low Dark Surface (I	=22)	pH, recently developed., see p. Supplement; explain in Remark
- I STOCK TO-			
appropriate land	dscape position mu color change in Re	ist be present unless	dicator of wetland hydrology, an disturbed or problematic.
Restrictive Layer (if present) Drainage Class:	SPD	and the second	V
Type: Soil Map Unit Na	ame:	Hydric Soil Pres	ent? Yes No
Depth (inches): N/A	North States	SALV.	
Comments:		13	a var
		54L 5	14
and the second			State Manufactor
(DROLOGY			Jan Starle
Vetland Hydrology Indicators (check ones that apply, measure from se	oil surface):	Secondary Indicat	ors (at least 2 are required)
Primary Indicators (any one indicator is sufficient)		Water-Stainer	dLeaves (B9)
✓ Surface Water (A1) ✓ Surface Soil Cracks (B6)		N Drainage Patt	ems (B10)
M High Water Table (A2) (w/in 12") M Inundation Visible on Aeria	ial Imagery (B7)	V Oxid'd Rhizos	pheres on Living Roots (C3) (with
∑ Saturation (A3) (w/in 12") ∧ Sparsely Vegetated Conce	cave Surface (B8)	Y Presence of R	educed Iron (C4)
✓ Water Marks (B1) ✓ Marl Deposits (B15)		N Salt Deposits	pil color change w/in 12") (C5)
Sediment Deposits (B2)	:1)		essed Plants (D1)
N/ Dry Second Water Table (M Geomorphic P	
mineral, 12"-40" organic)	(02)(0,000 24	M Shallow Aquit	and the second of the second
Algal Mat or Crust (B4) // Other (explain)		(w/in 24", can p	erch H ₂ O w/in 12")
\sim Iron Deposits (B5)			phic Relief (D4) (caused by water)
and the second	- 11 - 11 - 11 - 11 - 11 - 11 - 11 - 1	FAC Neutral T	est (D5)
ield Observations (in. from ground surface):			
urface Water Present? Yes No Depth of water (in		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
/ater Table Present? Yes No Depth to water (in		- fam. 1	
Seeping in at that depth but not yet fille		1	
aturation Present? Yes No X Depth to sat. (in.)		Wetland Hydrolog	y Present? Yes 🗶 No_
	nknown	16 m	Light Williamsell, 22
ncludes capillary fringe) Epi Endo Ur		1 16	
ncludes capillary fringe) Epi Endo Ur Describe Recorded Data (stream gauge, monitoring well, aerial photos, pr		s), if available:	LE MAY TO MERINA IN
escribe Recorded Data (stream gauge, monitoring well, aerial photos, pr	revious inspections	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
escribe Recorded Data (stream gauge, monitoring well, aerial photos, pr	revious inspections	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	ors observed.

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ΡΗΟΤΟ REPO	RT			Marshall Airport a	nd 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

Direction: NA

A Photo Type: Vegetation

Direction: S

Photo Type: Vegetation

WETLAND DETERMINATION	DATA FORM -	Alaska Region	
Project: Marshal Dirport Borough/C	ity: Kusilval	K CA	
Applicant/Owner: <u>ADOT</u>			Sampling Point #: <u>586</u>
Investigator(s): ZH BC		DR Alaska, Inc.	
Lat. (dec.") [01.87677] Long. 102.675255 ±' NA	D83 Recorded or	GPS?: X Marked	on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior			
Local relief: Shape across slope: linear/convex / concave Shape up/do			
Photo nos./descriptions: MESW - 2 50.1, C	amera#:	Veor Type (Viereck Le	vel4 orother): ILC2a
Are climatic / hydrologic conditions on the site typical for this time of year?		If no explain to left	(HGM type: This
Are Vegetation \mathbb{N} , Soil \mathbb{N} , or Hydrology \mathbb{N} significantly disturbed?			
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In			
SUMMARY OF FINDINGS			ed, explainanswershele.
Hydrophytic Vegetation Present? Yes X No .		, 	
	s the sampled area		
	within a wetland?		
Wetland Hydrology Present? Yes <u>Ves</u> No		Remarks (e.g., mar	ginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not rel	ative cover). % can	total >100%.	
<u>Tree Stratum</u> (dbh≥ 3")	· · · · · · · · · · · · · · · · · · ·	Dominance Test wor	Ksheet:
Species Cov.% Dom? Ind. Species Cov.% 1. Alone	1	Number of Dominant S That are OBL, FACW	
2 6		Total Number of Domi	nant 🧳
3 7 7		Species Across All St	
4 8			
Total Tree Cover:		Percent of Dominant S That are OBL, FACW	Species , or FAC: 100 (A/B)
50% of total cover: 20% of total cover:		Prevalence Index we	
 <u>Sapling/Shrub Stratum (</u> woody plants < 3" dbh)	www.	Total % Cove	rof: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.%	6 Dom? Ind.		1
1. Rho. tom. 15 Y FACWT. Alm. sin. 1	FAC		$\frac{10}{10}$ X1= $\frac{10}{120}$
2. Vac. VII. 15 Y FAC 8. Salipul. 3	FACW	• • •	<u>×3 </u>
3. Vac. vit. 7 _ FAC 9		FAC species	57 X3= $/7$
4. Emp. nim. 20 Y FAC 10		FACU species	X4=O
5. Bet, nah. 7 FAC 11		UPL + NL species	X5=
6 <u>Sal. fuse 5</u> FACW12		Column Totals: /	<u>30 (A) 307 (B)</u>
Total Sapling/Shrub Cover: <u>73</u>			
50% of total cover: <u>36.5</u> 20% of total cover: _	14.6	Prevalence Index	= B/A = <u>2,36</u>
Herb Stratum			
Abs.Cov.% Dom? Ind. Abs. Cov.%			
1. Evi, vag. 40 Y FACW12.	 	Hydrophytic Vegetat	ion Indicators:
2. <u>Car. agu. 10 0 082-13.</u>			
3. <u>Ped. sp. 3</u> 14	·	Dominance Te	
4. <u>Cav. biz. 7 FAC</u> 15			
5 16 17			Adaptations ¹ (Provide supporting
6 17 17 18 18		*	rks or on a separate sheet)
8 19		N_Problematic Hy	drophytic Vegetation ¹ (Explain)
9 20			
10 21		¹ Indicators of hydric se	oil and wetland hydrology must
11 22		be present unless dist	
Total Herb Cover: 60			
50% of total cover:	12	Hydrophytic	~
Circular 1/10-ac plot or other plot dimension: 20x20 % of bare	around: 0	Vegetation Ye	es <u> </u>
% Cover of Wetland Bryophytes% Total Cover of Bryophy (where applicable)		Present?	
Remarks:	l	L	
^			

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SOIL			J.	en e			1			Sampling Point#: 586
Profile I	Description:	(Describe to the de	pth need	ed to document the	indicato	rorconfir	m the abse	nce of indicat	ors)	1
Depth	Horizon	Soil Matrix	\$	Re	edox Fea	tures			a,a dip.	
<u>(in.)</u>	<u>(opt.)</u>	<u>Color (moist)</u>	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	<u>Loc</u> ²		<u>(pos/</u> neg)	<u>Remarks</u> (or use comment number)
0-0	$\frac{U_{l}}{U_{l}}$					<u> </u>				
10-11	<u> </u>	104R31-	10-			<u></u>		SUD	5.5	
11-15	17	54.4/1	80	7.54R.4/6	20	<u> </u>	IN DI DE	51/12	<u>Mi</u>	
15-20	<u> </u>	544/1	100	<u>1016-10</u>	- <u>68- 58</u>	 	" H. P. M. P.	SILU		· ·
			<u>, , , , , , , , , , , , , , , , , , , </u>	*****						
¹ Type: 0	C = Concent	ration, D = Depletion	, RM = Re	duced Matrix, CS=	Coated	Sand Gra	ins ² Locatio	on: PL = Pore	Lining, RC	C = Root Channel, M = Matrix
Hydric S	Soil Indicato	rs (check ones that	apply, m e	easure from top of	minera	l layers u	nless othe	rwise noted	:	
Standar	d Indicators	:		Indicators fo	or Proble	ematic H	ydric Soils	3.	·	
	stosol or Hist	. ,		Deplet	ed Belov	v Dark Su	rface (A11)	Л	_ Alaska (Color Change ⁴ (TA4)
His		n (A2) (8-16" organics mineral soil with chrom		_ <i>N_</i> Deplete	ed Matrix	x (F3)		A	_ Alaska A	Alpine Swales (TA5)
N Bla	ack Histic (A3		u,	N Redox	Dark Su	rface (F6))	A	Alaska F	Redox with 2.5Y Hue
		de (A4) (within 12"of	mineral	i		Surface (I		N	AK Gley	ed without Hue 5Y or
1 .	rface; @ ick Dark Surf			· · ·		ions (F8)	,	Λ	1	ler Underlying Layer ridyl positive (see pg. 91)
	aska Gleyed			1	•		1 N	1	2	ow organic matter, low iron, high
1	iska Gleyeu iska Redox (. ,		Red Parent Material (F21) Very Shallow Dark Surface (F22)			<u>-</u>	pH, red	cently developed., see p.91 of	
	iska Redox (iska Gleyed						• •			ement; explain in Remarks)
	iska Gleyeu	Poles (AT5)		appropriate la	andscap	positior positior	n must be p	one primary in resent unless	disturbed	wetland hydrology, and an or problematic.
				⁴ Give details	ofcolor	change ir	Remarks.			-
Restrictive Layer (if present)			Drainage Class: Pb					V		
Type:	<u>Nor</u>			Soil Map Unit	t Name:		Hyd	ric Soil Pres	ent?	Yes 🗶 🛛 No
Depth	(inches): _	NIA								
Commer	nts:									
1. 2.										
3.										
HYDROL	OGY									
Wetland	Hydrology	Indicators (check o	nes that a	pply, measur e fro r	m soil sı	urface):	Seco	ndary Indicat	ors (at leas	st 2 are required)
		any one indicator is				-	10 A.	✓ Water-Stained Leaves (B9)		
N Surface Water (A1)			Νī	<pre> Drainage Pattems (B10)</pre>						

N Surface Water (A1)	N_Surface Soil Cracks (B6)	N Drainage Pattems (B10)
└────────────────────────────────────	N Inundation Visible on Aerial Imagery (B7)	X Oxid'd Rhizospheres on Living Roots (C3) (within 12")
$\frac{1}{1}$ Saturation (A3) (w/in 12")	Sparsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4) (pos. α,α or soil color charge w/in 12")
🔨 Water Marks (B1)	<u>/ M</u> arl Deposits (B15)	N Salt Deposits (C5)
<u>M</u> Sediment Deposits (B2)	M Hydrogen Sulfide Odor (C1)	N_Stunted or Stressed Plants (D1)
<u>₩</u> Drift Deposits (B3)	Multiply-Season Water Table (C2) (w/in 12"-24" mineral, 12"-40" organic)	✓ Geomorphic Position (D2) ✓ Shallow Aquitard (D3)
Algal Mator Crust (B4)	M_Other (explain)	(w/in 24", can perch H ₂ O w/in 12")
N Iron Deposits (B5)		Microtopographic Relief (D4) (caused by water)
		FAC Neutral Test (D5)
Field Observations (in. from ground surfa	ace):	/
Surface Water Present? Yes	No _X Depth of water (in.)	
Water Table Present? Yes X	No Depth to water (in.)	
Seep	ing in at that depth but not yet filled?:	
Saturation Present? Yes <u>X</u>	No Depth to sat. (in.) <i>[0</i>	Wetland Hydrology Present? Yes X No
(includes capillary fringe)	Epi Endo Unknown	
Describe Recorded Data (stream gauge,	monitoring well, aerial photos, previous inspections	s), if available:
Remarks:		
Nothands.		
Two primary and three	e secondars indicudors obser	ved.

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US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR 2021

PHOTO REPOR	RT			Marshall Airport a	and Access Road Improvement
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

Direction: NA

NA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

PHOTO REPOR	RT			Marshall Airport an	d 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

PHOTO REPOR	RT			Marshall Airport a	nd Access Road Improvement
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

Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation

WETLAND DETERMINATION DATA FOR	M – Alaska Region
Project: Morshall Airport Borough/City: KUSil	Vak CA Date: 9/10/2022
Applicant/Owner: ADOT	Sampling Point #: <u>590</u>
	m: HDR Alaska, Inc.
.at. (dec. °) (01. 8 76 32 3 _Long. 1/02.0743602 'NAD 83 Record	ed on GPS?: X Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem La	
.ocal relief: Shape across slope: linear (convex) concave Shape up/downslope: line	
Photo nos./descriptions: NESN - Z 50-1, Camera#:	Veg Type (Viereck Level 4 or other): OBCS-IK
re climatic / hydrologic conditions on the site typical for this time of year? Yes: No.	
re Vegetation $\mathcal{N}_{,}$ Soil $\mathcal{N}_{,}$ or Hydrology $\mathcal{N}_{,}$ significantly disturbed? Are "Normal	
re Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? In Dry Season	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes K No Is the sample within a wetta	
Wetland Hydrology Present? Yes X No	Remarks (e.g., marginal?):
EGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). %	
	Dominance Test worksheet:
Tree Stratum (dbh>3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	. Number of Dominant Species
1. <u>Novl,</u> 5	That are OBL, FACW, or FAC:(A)
2 6	— — Total Number of Dominant /
3 7 7	Species Across All Strata: (2 (B)
4 8	_
Total Tree Cover:	Percent of Dominant Species
	That are OBL, FACW, or FAC: ///// (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3"dbh) Abs.Cov.% Dom? Ind Abs.Cov.% Dom? In	Total % Cover of:Multiply by:
1. <u>Aln. sin_25 Y FAC 7. Bat. num.</u> 7 _ F	d. OBL species X1=
2. Rho. tim, 15. Y FACW 8.	FACW species <u>45</u> X2= <u>90</u>
3. Vac. Uli, 15 Y FAC 9.	FAC species X3=_207-
4. <u>Sal. myli, 10</u> FACW10	FACU species X4=
5. Vac. v. 4 FAC 11	UPL + NL species X5=
6. Emp. n.h. 15 Y FAC 12.	- Column Totals: $\underline{124}$ (A) $\underline{367}$ (B)
50% of total cover: 47 20% of total cover: 18.8	Prevalence Index = B/A = <u>2.48</u>
Herb Stratum	
Find the M Codely	d.
1. Eri, Vac. 15 Y FACW12	 Hydrophytic Vegetation Indicators:
3. R. b. Eng, 5 FACIMA	Dominance Test is >50%
4 15	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
ð 17 17	data in Remarks or on a separate sheet)
7 18	— Problematic Hydrophytic Vegetation ¹ (Explain)
3 19	
9 20	
10 21	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22	
50% of total cover: 50% of total cover: 6.0	
So wor total cover 20% of total cover Circular 1/10-ac plot or other plot dimension: 15×15 % of bare ground:	– Hydrophytic Vegetation Yes No
Circular 1/10-ac plot of other plot dimension: <u>() $\chi/5$</u> % of bare ground: <u>C</u> % Cover of Wetland Bryophytes% Total Cover of Bryophytes 2 σ	Present?
	_^0
(where applicable)	

SOIL					Sampling Point #: <u>590</u>	
Profile Description: (Describe to the depth needed	o document the indicato	or or confirm th	e absence of indicat	ors)		
Depth Horizon <u>Soil Matrix</u>	Redox Fea	tures		α,α dip.		
(in.) (opt.) Color (moist) %	<u>Color (moist) %</u>	Type ¹ I	Loc ² Texture	<u>(pos/</u>	Remarks	
0-5 0%				neg)	(or use comment number)	
5-17 00						
17-2) 12 544/1 05 7	RUR UNIT 15	Re Re	A.M. 8115	-		
	<u> </u>	<u> </u>	<u>Flipper Commer</u>	<u> </u>		
	· · · ·					
		<u> </u>		·		
			<u> </u>			
			<u> </u>	·		
		- <u> </u>	<u></u>			
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:	Indicators for Proble	ematic Hydri	c Soils ³ :			
Histosol or Histel (A1)	$\underline{\mathcal{N}}$ Depleted Below	v Dark Surfac	e (A11)	_ Alaska Co	lor Change ⁴ (TA4)	
Histic Epipedon (A2) (8-16" organics, sat'd, Underlein by minoral coll with chrome (2)						
underlain by mineral soil with chroma ≤2)					<	
AJ Black Histic (A3)	Redox Dark Su		N	_Alaska Re	dox with 2.5Y Hue	
<u>M</u> Hydrogen Sulfide (A4) (within 12"of mineral surface; @ " in this pit	Depleted Dark	Surface (F7)	2		d without Hue 5Y or	
surface; @" in this pit						
Alaska Gleyed (A13)	N Red Parent Mat	terial (F21)			organic matter, low iron, high	
Alaska Redox (A14)	All PH, recently developed., see p.91 of Supplement; explain in Remarks)					
N Alaska Gleyed Pores (A15) ³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an						
appropriate landscape position must be present unless disturbed or problematic. ⁴ Give details of color change in Remarks.						
Restrictive Layer (if present)		D				
Type:	Soil Map Unit Name:	1997	Hydric Soil Pres	ent?	res X No	
Depth (inches): N/R						
Comments:						
1.						
2.						
3.						
HYDROLOGY						
Wetland Hydrology Indicators (check ones that app	y, measure from soil su	urface):	Secondary Indicat			
Primary Indicators (any one indicator is sufficient)			Water-Stained Leaves (B9)			
▲ Surface Water (A1) ▲ Surface Soil Cracks (B6)			N Drainage Pattems (B10)			
High Water Table (A2) (w/in 12") 🕺 🕺 Inundation Visible on Aerial Imagery (B7) 🕺 🔨 Oxid'd Rhizospheres on Living Roots (C3) (within					ving Roots (C3) (within 12")	
Sparsely Vegetated Concave Surface (B8)				educed Iron	(C4)	
Water Marks (B1) Marl Deposits (B15)			(pos. α,α or so <u>ν</u> Salt Deposits (C5)	e w/in 12")	
<u>N</u> Sediment Deposits (B2) <u>N</u> Hydrogen Sulfide Odor (C1)					(D4)	
	문제 요즘 가지 않는 것 같아. 나는 것 같아. 것 같아.	w/in 10" 0.4"	<u>∧</u> Stunted or Str		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Drift Deposits (B3)						
Minimizeral, 12 - 40 organic) Minimizeral, 12 - 40 organic) Algal Mat or Crust (B4) Monopole Other (explain) (w/in 24", can perch H ₂ O w/in 12")						
✓ Iron Deposits (B5)					4) (caused by water)	
		•	FAC Neutral To		, (, , , , , , , , , , , , , , , , , ,	
Field Observations (in. from ground surface):		1				
Surface Water Present? Yes No	Depth of water (in.)					
Water Table Present? Yes X No	· · · · · · · · · · · · · · · · · · ·	15 rising				
		0				
	ng in at that depth but not yet filled?: No Depth to sat. (in.) Wetland Hydrology Present? Yes X No					
Saturation Present? Yes <u>No</u> No	Depth to sat. (in.)	۶ <u>ــــــــــــــــــــــــــــــــــــ</u>	wetland Hydrolog	y Present?	Yes <u>/</u> No	
(includes capillary fringe)	Epi Endo Unknov) if ovoilable			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						
	<i>(</i> 1 <i>,)</i> .	a ' [*] Rec	A			
Plot located on low mound but	- still meets	wellan	JEriteria.	в.		
			· · · · · ·	-		

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PHOTO REPOR	Т			Marshall Airport a	nd 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

A Photo Type: Vegetation

Direction: E

Photo Type: Vegetation

PHOTO REPOR	RT			Marshall Airport a	nd 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

PHOTO REPOR	т			Marshall Airport a	nd 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

PHOTO REPOR	RT			Marshall Airport a	nd 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

PHOTO REPOR	RT			Marshall Airport a	nd 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

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall Airport Borough/City: Kusilva	K CA Date: 9/18/2022
Applicant/Owner: 1+Do 7	Sampling Point #: <u>595</u>
	HDR Alaska, Inc.
Lat. (dec.°) (01. 9.75891 Long. 162. 049/43 ± ' NAD 83 'Recorded of	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landfo	orm: <u>AMS ill</u> Slope (%): <u>15</u> Aspect: <u>E</u>
Local relief: Shape across slope: linear / convex/ concave Shape up/downslope: linear /	convex / concave NWI classification:
Photo nos./descriptions: NESW T-Soil, Camera#:	Veg Type (Viereck Level 4 or other): <u>OMF-IC2</u> e
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain Metter HGM type: NMA
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} significantly disturbed? Are "Normal Circu	
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> naturally problematic? In Dry Season? Ye	
SUMMARY OF FINDINGS	v
Hydrophytic Vegetation Present? Yes No X	An
Hydric Soil Present? Yes No Ker within a wetland?	
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%. Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species 4 (A)
2. Pic. 5/6 15 Y FACU 5	
2. <u>Pic. gla.</u> <u>15</u> <u>HACU6</u> 3. Bet. papi <u>10</u> <u>Y</u> FACU7.	Total Number of Dominant Species Across All Strata:
Total Tree Cover: 40	Percent of Dominant Species That are OBL, FACW, or FAC:
50% of total cover: <u>20</u> 20% of total cover: <u>8.0</u>	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species O X1= O
1. Almisin, 5 FAC 7. Pic. gla, 7 M FACU	
2. VAC. Uli. 15 Y FAC 8. Kho. tom. 3 FACW	IF In IP on
3. Vac. Vit. 5 FAC 9	FAC species 30 $X3 = 750$ FACU species 60 $X4 = 240$
4. Emp. N.a. + 1 +HC 10	
5.15et. 618. 15 1 1710 11.	UPL + NL species X5=
Total Sapling/Shrub Cover: 62	Column Totals: <u>//3 (</u> A) <u>596</u> (B)
	2 00
50% of total cover:20% of total cover:	Prevalence Index = B/A =
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. <u>Spisann. 5 Y FACU12.</u> 2. <u>Cal.can. 3 Y FAC13.</u>	Hydrophytic Vegetation Indicators:
3. Charahy 3 4 FACU14	N Dominance Test is >50%
4 15	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
6 17 17	data in Remarks or on a separate sheet)
۶ [°] 7 18. <u>،</u> 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19	
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11 22	
Total Herb Cover: 50% of total cover:5.5 20% of total cover: 2.2	
	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: 23×20 % of bare ground: $20 - 1.4$	Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	I

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SOIL Profile Desc	rintion: (De	scribe to the de	nth needed t	o document the	Indicate	vorconfirm	a the eb			Sampling Point #:	595
			punneedeuu	이 가지 말했다.			ninead	sence of indicat			
	onizon	Soil Matrix			dox Fea	-			α,α dip. <u>(pos/</u>	Domode	
(in.) (o	<u>pt.) (</u> つご	Color (moist)	<u>%</u>	<u>Color (moist)</u>	<u>%</u>	Type ¹	<u>Loc</u> ²	<u>Texture</u>	<u>neg)</u>	<u>Remarks</u> (or use comment	
2-10 -	\overline{A} $\overline{7}$	NUDZA			—			<1/ 3	~		
10-110 -	<u> </u>	YR 3/61	30	- Mary	and the second		lever	Slin			
	/0	424/2	2.0	~	- met		J	5/10	a the second sec		
10-20	10	YRYIY					-	SALO		30% g new	.00
[2 T	-	C · ·					× .	2010 9174	
			· · · ·								· · · · ·
						· ·	2.	·			
				sure from top of						= Root Channel, M	= Matrix
Standard Inc				Indicators fo							
<u> </u>	ol or Histel (A	1)		N_Deplete		•		1	Alaska C	Color Change⁴ (TA4))
) (8-16" organics		<u>A</u> Deplete	ed Matri	x (F3)				lpine Swales (TA5)	•
	listic (A3)	ral soil with chrom	a 52)	1.1	1.11	rface (F6)		•		Redox with 2.5Y Hue	
N Hydrog	en Sulfide (A	(within 12"of	mineral		20	Surface (F	7)	¥		ed without Hue 5Y c	
	; @"ii	•		619	4		")	- <u> </u>	Redd	er Underlying Layer	r j
A 3	ark Surface				•	sions (F8)		<u>~</u>		ridyl positive (see pg.	2 C. S
1	Gleyed (A13	-		k		terial (F21)		A	Other (Lo pH, rec	ow organic matter, low ently developed., see p	iron, high p.91 of
	Redox (A14)					ark Surface	• •		Suppler	ment; explain in Remai	irks)
N_Alaska	Gleyed Pore	s (A15)		³ One indicato	rofhyd	rophytic ve	getatio	n, one primary in e present unless	dicatorofw	vetland hydrology, a	ind an
				⁴ Give details	ofcolor	change in l	Remark	s present unless	aisturbeao	or problematic.	
Restrictive La	yer (if prese	nt)		Drainage Cla							
Туре: 🧍	Vone	. 16		Soil Map Unit	Name:	ş	н	ydric Soil Pres	ent?	Yes No	<u>X</u> ==
and and a start of the start of	ches):A	1/14		le de la							
Comments: 1.		· · · ··									
2.											
<u>3.</u>											
HYDROLOG			- 4	-			-				
		a tors (check or one indicator is s		y, me a sure fron	n soil si	urface):		condary Indicate			
N_Surface \	963.0	one indicator is a		e Soil Cracks (B6	3)			Water-Stained Drainage Patter		9)	
	ter Table (A2) (w/in 12")		tion Visible on A		agerv (B7)			• •	_iving Roots (C3) (wi	 (ithin 12")
N Saturatio	on (A3) (w/in 1	12")	•	ly Vegetated Co				Presence of R	educed Iro	n (C4)	
N Water Ma			• .	eposits (B15)	induite c	2411400 (20	· .	(pos. o,o or so Salt Deposits (ge w/in 12")	
N Sedimen		2)	3	en Sulfide Odor	·(C1)			_ Stunted or Str		its (D1)	
 Drift Dep	•		N Dry-Sea	ason Water Tab		w/in 12"-24"	145	Geomorphic P		• •	
N Algal Mat		N		, 12"-40" organic)				Shallow Aquita	ard (D3)	,	
	•)	Other (explain)			٨	(w/in 24", can p		in 12") D4) (caused by water)	۰
<u>_</u> ↓ Iron Depo	osits (B5)							FAC Neutral Te		D4) (caused by water))
Field Observa	itions (in. from	n ground surfac	æ):								*
Surface Wate	r Present?	Yes	No 🔟	Depth of wate	er (in.) _						
Water Table F	Present?	Yes	No <u>X</u>	Depth to wate	er (in.)						
		Seepir	ng in at that d	lepth but not yet	filled?:						
Saturation Pre		Yes	No _X	Depth to sat. ((in.)		We	tland Hydrolog	y Presenť	? Yes No	Y
(includes capi		,		Epi Endo							ø -
Describe Reco	orded Data (s	stream gauge, n	nonitoring we	ell, aenal photos,	, previoi	us inspectio	ons), if a	vailable:			
Remarks:										······································	
				. ~				1 4.			

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PHOTO REPOR	PHOTO REPORT Marshall Airport and Access Road Improvement									
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

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Marshall Airport Borough/City: Kusilla	K CA Date: 9/18/2027
Applicant/Owner: A DoT	Sampling Point#: 596
Investigator(s): <u>ZA/BC</u> Firm:	HDR Alaska, Inc.
Lat. (dec. °) (01. 375784 Long. 162.050274 ± ' NAD 83 Recorded	on GPS?: λ Marked on map? λ Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	
Local relief: Shape across slope: linear/convex concave Shape up/downslope: linear/	
Photo nos./descriptions: <u>MESU - 230, 1</u> Camera#:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ significantly disturbed? Are "Normal Circle	umstances" present? Yes X No
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic? In Dry Season? Y	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes <u>No</u> No	19. A.19.2
Hydric Soil Present? Yes Xen No Is the sampled and within a wetland	
Wetland Hydrology Present? Yes X No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
	Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Deminent Constant
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1.신하고 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2 6 6	Total Number of Dominant
3 7	Species Across All Strata:
4 8	(5)
Total Tree Cover:	Percent of Dominant Species
· · · · · · · · · · · · · · · · · · ·	That are OBL, FACW, or FAC: _/ O' (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov. % Dom? Ind. 1. Sal. alk, 20 Y FAC 7. Ruo, Lom, 3 FACW	OBL species X1=
2. Salavbi 15 V FACW 8. Spinster 1 FACH	FACW species <u>28</u> x2= <u>56</u>
3. Salipuli, 10 Y. FACW 9. Bet. pap. 5 FACH	FAC species 58 x3= 174
4. Pic. slar 5 FACU 10. Por hall 3 FACU	FACU species X4=56
5. V6 C. Uli, 10 Y FAC 11.	UPL + NL species O X5= O
6. <u>Prin.s.n. 3</u> <u>FAC</u> 12	Column Totals: 105 (A) 286 (B)
Total Sapling/Shrub Cover: <u>15</u>	
50% of total cover: <u>37.5</u> 20% of total cover: <u>15</u>	Prevalence Index = $B/A = 2.86$
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Cali can. 15 Y FAC 12.	Hydrophytic Vegetation Indicators:
2. Equ. arv. 10 Y FAC 13.	
314	Dominance Test is >50%
4 15 5 16	
6 17	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	
8 19	N Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: <u>25</u>	
50% of total cover: 20% of total cover: 2	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension:5 × 15 % of bare ground 20-1; Here	Vegetation Yes <u>No</u> No Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	L

SOIL			Net your to be	1 2 2 2 2 2					din Pa	Sampling Point #: 594
Profile De	escription:	(Describe to the de	epth neede	d to document the	indicato	prorconfi	m the abso	ence of indicato	ors)	
Depth	Honzon	Soil Matrix		Re	dox Fea	atures	. ·	1 2 N	α,α dip.	
<u>(in.)</u>	<u>(opt.)</u>	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	(pos/ neg)	(or use comment number)
0-1	01							·····		
125	Β,	2.54 4/1	15	7.54R 3/4	5	<u>C</u>	M.PL	Loam		10% gravel
		2.57 4/3	<u>80</u> _					<u>.</u>		· · · · · · · · · · · · · · · · · · ·
3-15	122	544/1	75 1	1,54R 4/4	25	<u>_</u>	MPLRC	SILO	+	
15-20	<u>Oeb</u>	Sayan.		48885x40 2 ⁵	-judite -		A State		galacifuit ivres	
					******	-				· · · · · · · · · · · · · · · · · · ·
1				· · · · · · · · · · · · · · · · · · ·						
										c = Root Channel, M = Matrix
		rs (check ones tha	t apply, me a							
. 1	Indicators osol or Histe			Indicators fo			-			
		(A2) (8-16" organic	s.sat'd.	_ <u>N</u> Deplete			nace (ATT) /*		Color Change ⁴ (TA4)
		nineral soil with chrom		_ <u>N</u> Deplete	ed Matri	x (F3)		<u>_N</u>	_ Alaska A	Alpine Swales (TA5)
	k Histic (A3			_ <u>//</u> Redox I	Dark Su	Inface (F6)	<u></u>		Redox with 2.5Y Hue
	rogen Sulfic ace; @	le (A4) (within 12"of " in this pit	mineral	_N_ Deplete	d Dark	Surface (F7) 🔍	N		ed without Hue 5Y or
	k Dark Surf			_N_ Redox I	Depres	sions (FR)	- A	N		er Underlying Layer ndyl positive (see pg. 91)
<u> </u>	ka Gleyed (iterial (F2			1	ow organic matter, low iron, high
						•			pH, rec	cently developed., see p.91 of
	ka Redox (/	-		<u> </u>				l.		ment; explain in Remarks)
Alas	ka Gleyed I	Pores (A15)		°One indicato appropriate la ⁴Give details	andscap	pe positio	n must be p	present unless (dicator of v disturbed o	vetland hydrology, and an or problematic.
Restrictive	Layer (if pr	esent)		Drainage Cla						- 4
Type:	None	~		Soil Map Unit	· · · ·		Hy	dric Soil Prese	ent?	Yes No
Depth	(inches):	NIA								· · · · · · · · · · · · · · · · · · ·
Comments	s:	- 57							÷	
1. 2. ₁	iyad Vitan		~ 11 ~					:		24 m
3. Locu	m horiz	on could be	fill dros	madjacen	+ YOA	s/mut	nial si	de,		
HYDROLC			· · ·	7						
		ndicators (check o	-	ply, m ea sure fron	n soil s	urface):				t 2 are required)
F 8		any one indicator is						Water-Stained		
	ce Water (A Nater Table	(A2) (w/in 12")	9	ice Soil Cracks (Bé dation Visible on A		ogon (D7		Drainage Patte		
						• • •	· 7.	Presence of Re		Living Roots (C3) (within 12")
7.	ation (A3) (v		*	sely Vegetated Co	oncave \$	Surface (E	$\overline{1}$	(pos.α,α or so	il color cha	
-	r Marks (B1)			Deposits (B15)	(a .)			Salt Deposits (- 197.
2 ° .	nent Deposi			ogen Sulfide Odor	• •	(Stunted or Stre		
N Drift D	eposits (B3)	mine	eason Water Tab al, 12"-40" organic)	ie (CZ)	(w/in 12"-2		Shallow Aquita		e)-Contack
Algal I	Mator Crus	(B4)	\underline{N} Othe	- •			1	(w/in 24", can pe	erch H ₂ O w	•
N Iron D	eposits (B5)			÷.		· ·			(D4) (caused by water)
F							<u> </u>	FAC Neutral Te	est (D5)	
	-	from ground surfa				,1/1				
	ater Preser	51	No X			NIM				
wateriab	le Present?		No	Depth to wate		10				
Cohurt!-	Denser (0		-	depth but not yet		1.11			-	• • × -
Saturation	Present? apillary fring	Yes <u> </u>	No	• •		1	Wet	land Hydrolog	y Present	? Yes <u>No</u> No
		ita (stream gauge,	monitorina	Epi Endo well. aerial photos			tions), if av	ailable:		
		,		Photos	, _ ,					
Remarks:			_							

PHOTO REPOR	PHOTO REPORT Marshall Airport and Access Road Improvem									
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					
	<image/>				<image/>					

Photo Type: Soils

Direction: NA

Photo Type: Vegetation Direction: S

Photo Type: Vegetation

PHOTO REPORT Marshall Airport and Access Road Improven								
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

WETLAND DETERMINATION DATA FORM -	Alaska Region
Project: Marshall A: port Borough/City: Kusilva	
Applicant/Owner: <u>ADOT</u>	Sampling Point #: <u>518</u>
	IDR Alaska, Inc.
Lat. (dec. °)[0], 87569] Long. 102, 050902 ± ' NAD 83 Recorded o	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northem Landfo	
Local relief: Shape across slope: / linear/convex/concave Shape up/downslope: linear/convex/c	
	Veg Type (Viereck Level 4 or other): <u>OMF - TCZ</u> a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: X	
Are Vegetation N, Soil N, or Hydrology V, significantly disturbed? Are "Normal Circu	
Are Vegetation M, Soil M, or Hydrology M naturally problematic? In Dry Season? Ye	esNo _X If needed, explain answers here.
SUMMARY OF FINDINGS	·
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car Tree Stratum (dbh≥ 3")	n total >100%. Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Pic. gla. 20 1 FALU 5	Number of Dominant Species
2. Bet. Pap. 20 Y EACU6	Total Number of Dominant Species Across All Strata:
4 8	
Total Tree Cover: <u>40</u>	Percent of Dominant Species 50 (A/B)
50% of total cover: 20 20% of total cover: 8,0	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Coverof: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species O X1= O
1. <u>Sal.sco, 15 Y Mc 7.</u>	FACW species X1=
2. <u>Pic sta.</u> <u>3</u> <u>FACU 8.</u>	FAC species 35 $x_3 = 105$
3. Bet pap, 10 Y FALU 9	FACU species 58 $x_4=232$
4. <u>Cor. Coladia 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</u>	
6 12	UPL + NL species \underline{O} X5= \underline{O} Column Totals: $\underline{93}$ (A) $\underline{290}$ (B)
Total Sapling/Shrub Cover:2 8	
50% of total cover:	Prevalence Index = $B/A = 3.12$
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Dry, exp. 3 PAC412.	-
1. <u>Ury. exp.</u> <u>3</u> <u>174(412.</u> 2. <u>Cal. con</u> , <u>10</u> <u>Y</u> <u>FAC</u> 13.	Hydrophytic Vegetation Indicators:
3. Equ. arv, 10 Y FAC 14	 Prevalence Index is ≤3.0
5. Car. can EACU6	Morphological Adaptations ¹ (Provide supporting
617 17 17 17 18	data in Remarks or on a separate sheet)
8 19 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20 10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22 22	be present unless disturbed or problematic.
	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: <u>20X70</u> % of bare ground: <u>20 little</u> % Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks:	

Dente de la	• ••••						ence of indicat	•	
Depth Horizon	Soil Matrix		Re	dox Fea	tures			α,αdip.	. .
<u>(in.) (opt.)</u>	<u>Color (moist)</u>	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	<u>(pos/</u> neg)	<u>Remarks</u> (or use comment numbe
<u>6-1 0e</u>								negr	tor use comment numbe
1-7	10412 5/4	35	×520-	-	estration,	mer	GRLO	*******	2
	IUYR YIG	65		کیوہ	the contract	~~~~	GRLO	wati	
7-70	7.54R3/7	78	7.5YR 3/4	7	<u> </u>	M	SILO		
	INUR 4/1	15 -				<u></u>	J		
	101	<u> </u>							
	· · · · · · · · · · · · · · · · · · ·	·	1						
······································		<u> </u>	4	—					<u> </u>
						21			
									= Root Channel, M = Mat
Hydric Soil Indicato		t apply, me			-			:	
Standard Indicators			Indicators fo		-				4
N Histosol or Histo	ei (A1) n (A2) (8-16" organic	o ootid	- and the second second		v Dark Surl	ace (A11) <u>1</u>		olorChange ⁴ (TA4)
	mineral soil with chron		M_ Deplete	ed Matrix	x (F3)		<u>_/</u>	_ Alaska A	lpine Swales (TA5)
M Black Histic (A3)	. •	N Redox	DarkSu	rface (F6)		N	_ Alaska R	edox with 2.5Y Hue
	de (A4) (within 12"o	fmineral			Surface (F	7)	N	AK Gleve	ed without Hue 5Y or
surface; @	" in this pit		Tehlett	u Daik	Sunace (F	()			er Underlying Layer
N Thick Dark Surf	ace (A12)		N_Redox	Depress	sions (F8)		$\underline{\Lambda}$	_ α,α-dipyr	idyl positive (see pg. 91)
M Alaska Gleyed	(A13)		M Red Pa	rent Ma	terial (F21))	N		w organic matter, low iron, h
N Alaska Redox (A14)		-		ark Surfac				ently developed., see p.91 of nent; explain in Remarks)
N Alaska Gleyed						• •			
<u>IV</u> Alaska Gleyeu	roles (A15)						, one primary in present unless		etland hydrology, and an roroblematic.
	3		⁴ Give details	ofcolor	change in	Remarks			
Restrictive Layer (if p	resent)		Drainage Cla	ss: Mr	20				. <i>t</i>
	0		Coil Man Unit	Namo	<i>E</i>			o m#2	Voc No X
Туре: _/U	×		Soil Map Unit	name.		НУ	dric Soil Pres	entr	Yes No 🔨
Type: ///テー Depth (inches):_	NIA		Soli Map Uni	manne.		Ну	aric Soli Presi		
	NIA					Ну	aric Soli Pres		
Depth (inches):_ Comments: I.	<u>NIA</u>					Ну	aric Soli Pres		
Depth (inches): _ Comments:	N/A	- orobla			is d N			cen. hat	the india base
Depth (inches):_ Comments: 	N/A h., dro for	proble	matic ind		15 ¢ No			entr Cegulat	by indicators.
Depth (inches):_ Comments: B. No primary YDROLOGY	h., dira for	1	matic ind	(c, to		o hyde	rophy tiz v	regulat	bry indicators.
Depth (inches):_ Comments: 	h. J. Lov for ndicators (check o	nes that ap	matic ind	(c, to		o hydi Sec	ophy fiz v	دور بابط ل ors (at least	by india fors.
Depth (inches):_ Comments: 	h, Jro Gov ndicators (check o any one indicator is	nes that ap sufficient)	matic ind	(_{ci,} to, n soil si		s hyde Sec	ophy fiz v ondary Indicate Water-Stained	ors (at least	by indicators, 2 are required) 9)
Depth (inches): _ Comments: 	h., d. /a for ndicators (check o any one indicator is 1)	nes that ap <u>sufficient)</u> <u>M</u> Surfa	matic ind oply, measure from ace Soil Cracks (B	(_{e,,} to n soil si 6)	urface):	o hydi Sec	ophy h'z v ondary Indicate Water-Stained Drainage Patte	ors (at least Leaves (B ems (B10)_	indicators, 2 are required) 9)
Depth (inches): Comments: 	h, $\frac{1}{2}$, $\frac{1}{2$	nes that ap <u>sufficient)</u> <u>M</u> Surfa <u>M</u> Inun	untic ind oply, measure from ace Soil Cracks (Br dation Visible on A	n soil si 6) erial Ima	u rfac e): agery (B7)	o hydi Sec <u>Al</u> M	worky h'z v ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp	ors (at least Leaves (B ems (B10)_ pheres on L	12 are required) 9)
Depth (inches): Comments: 	h, $\frac{1}{2}$, $\frac{1}{2$	nes that ap <u>sufficient)</u> <u>M</u> Surfa <u>M</u> Inun	matic ind oply, measure from ace Soil Cracks (B	n soil si 6) erial Ima	u rfac e): agery (B7)	o hydi Sec <u>Al</u> M	ophy h'z v ondary Indicate Water-Stained Drainage Patte	ors (at least d Leaves (B ems (B10)_ oheres on L educed Iroi	2 are required) 9) .iving Roots (C3) (within 12 n (C4)
Depth (inches): Comments: 	h., $d_{1/2}$ for ndicators (check of any one indicator is (1) (A2) (w/in 12") w/in 12")	nes that ap sufficient) <u>M</u> Surfa <u>M</u> Inun <u>M</u> Spar	untic ind oply, measure from ace Soil Cracks (Br dation Visible on A	n soil si 6) erial Ima	u rfac e): agery (B7)	o hydi <u>Sec</u> <u>Al</u> <u>M</u> 3) M	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R	ors (at least d Leaves (B ems (B10)_ oheres on L educed Iron il color chan	2 are required) 9) .iving Roots (C3) (within 12 n (C4)
Depth (inches): Comments: 	h, dvo for ndicators (check o <u>any one indicator is</u> (1) a (A2) (w/in 12") w/in 12")	nes that ap sufficient) <u>Af</u> Suffa <u>M</u> Inun <u>M</u> Spar <u>Af</u> Mari	which ind oply, measure fror ace Soil Cracks (Br dation Visible on A sely Vegetated Co	(₂₁ , † o n soil si 6) erial Ima oncave S	u rfac e): agery (B7)	s kyde Sec M M S) M M	ondary Indicate Ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or sc	ors (at least Leaves (B ems (B10)_ oheres on L educed Iron oil color chang (C5)	12 are required) 9)
Depth (inches): Comments: 1 3 YDROLOGY Wetland Hydrology Primary Indicators (M Surface Water (A High Water Table M Saturation (A3) (Water Marks (B1 M Sediment Depos	h., J./o. for ndicators (check o any one indicator is 1) e (A2) (w/in 12") w/in 12")) its (B2)	nes that ap sufficient) Al Surfa N Inun A Spar A Mart Mart A Dry-S	watz ind oply, measure from ace Soil Cracks (Bi dation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odo Season Water Tab	n soil si 6) erial Ima oncave S r (C1) ole (C2) (urface): agery (B7) Surface (B8	s kydi Sec Al Al Al	<u>ophy h'</u> z v ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or so Salt Deposits ((Cg. J.A. L ors (at least d Leaves (B1 d Leaves (B10)_ oberes on L educed Iron il color chan (C5) essed Plan	india fors, <u>t 2 are required</u>) 9) .iving Roots (C3) (within 12 n (C4) ge w/in 12") ts (D1)
Depth (inches): Comments: 1. 2. 3. A o primary YDROLOGY Wetland Hydrology Primary Indicators (M Surface Water (A M Surface Water (A)) (M Surface (A)) (M Surfac	h, dva for Indicators (check o any one indicator is (1) (A2) (w/in 12") w/in 12") its (B2) (3)	nes that ap sufficient) M Surfa M Inun M Spar Mart M Hydr M Dry-S mine	pply, measure from ace Soil Cracks (Bi dation Visible on A rsely Vegetated Co Deposits (B15) ogen Sulfide Odo Season Water Tab ral, 12"-40" organic)	n soil si 6) erial Ima oncave S r (C1) ole (C2) (urface): agery (B7) Surface (B8	s kydi Sec Al Al Al Al Al	<u>ondary Indicate</u> Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or so Salt Deposits (Stunted or Str Geomorphic P Shallow Aquita	ors (at least Leaves (B10)_ oberes on L educed Iron il color chan (C5) essed Plan osition (D2) ard (D3)	by indicators, t 2 are required) 9) .iving Roots (C3) (within 12 n (C4) ge win 12") ts (D1))
Depth (inches): Comments: 1 3 YDROLOGY Wetland Hydrology Primary Indicators (M Surface Water (A High Water Table M Saturation (A3) (Water Marks (B1 M Sediment Depos	h, dva for Indicators (check o any one indicator is (1) (A2) (w/in 12") w/in 12") its (B2) (3)	nes that ap sufficient) M Surfa M Inun M Spar Mart M Hydr M Dry-S mine	watz ind oply, measure from ace Soil Cracks (Bi dation Visible on A sely Vegetated Co Deposits (B15) ogen Sulfide Odo Season Water Tab	n soil si 6) erial Ima oncave S r (C1) ole (C2) (urface): agery (B7) Surface (B8	s kydi Sec Al Al Al Al Al	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or so Salt Deposits (Stunted or Str Geomorphic P Shallow Aquita (w/in 24", can p	(Cg. J.A. Í. ors (at least d Leaves (B10)_ cheres on L educed iron il color chan (C5) essed Plan osition (D2) ard (D3) erch H ₂ O w/i	<u>by</u> india fors, <u>t2 are required)</u> 9) .iving Roots (C3) (within 12 n (C4) ge w/in 12") ts (D1)) n 12")
Depth (inches): Comments: YDROLOGY Vetland Hydrology Primary Indicators (M Surface Water (A High Water Table M Surface Water (A Guinent Deposits (B1 M Drift Deposits (B1 M Drift Deposits (B1 M Drift Deposits (B1	h., J. Cov indicators (check o any one indicator is 1) a (A2) (w/in 12") w/in 12")) its (B2) 3) t (B4)	nes that ap sufficient) M Surfa M Inun M Spar Mart M Hydr M Dry-S mine	pply, measure from ace Soil Cracks (Bi dation Visible on A rsely Vegetated Co Deposits (B15) ogen Sulfide Odo Season Water Tab ral, 12"-40" organic)	n soil si 6) erial Ima oncave S r (C1) ole (C2) (urface): agery (B7) Surface (B8	o hydr Sec Al Al Al Al Al Al	<u>ondary Indicate</u> Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or sc Salt Deposits (Stunted or Str Geomorphic P Shallow Aquita (w/in 24", can p Microtopograp	ors (at least d Leaves (B ems (B10) oheres on L educed Iron oil color chan (C5) essed Plan (C5) essed (C5) essed (C5) esse	by indicators, t 2 are required) 9) .iving Roots (C3) (within 12 n (C4) ge win 12") ts (D1))
Depth (inches): Comments: 1. 2. 3. A o Printary YDROLOGY Wetland Hydrology Primary Indicators (Mater Marks (B1 Mater Marks (B1) Mater Mater Ma	h, $d/0$ $f_{0'}$ Indicators (check of any one indicator is (1) (A2) (w/in 12") w/in 12") its (B2) (B4))	nes that ap sufficient) M Suffa M Inun M Spar Marl M Marl M Dry-5 mine M Othe	pply, measure from ace Soil Cracks (Bi dation Visible on A rsely Vegetated Co Deposits (B15) ogen Sulfide Odo Season Water Tab ral, 12"-40" organic)	n soil si 6) erial Ima oncave S r (C1) ole (C2) (urface): agery (B7) Surface (B8	o hydr Sec Al Al Al Al Al Al	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or so Salt Deposits (Stunted or Str Geomorphic P Shallow Aquita (w/in 24", can p	ors (at least d Leaves (B ems (B10) oheres on L educed Iron oil color chan (C5) essed Plan (C5) essed (C5) essed (C5) esse	<u>by</u> india fors, <u>t2 are required)</u> 9) .iving Roots (C3) (within 12 n (C4) ge w/in 12") ts (D1)) n 12")
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US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR 2021

PHOTO REPOR	кт			Marshall Airport a	nd 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

HOTO REPOR	RT			Marshall Airport a	and Access Road Improvement
Plot Number	HDR599	Wetland Status	Wetland	Vegetation Type	Open Mixed Shrub Sedge Tundr
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

IA Photo Type: Vegetation

Direction: N

Photo Type: Vegetation

PHOTO REPOR	Т			Marshall Airport a	nd Access Road Improvements	
Plot Number	HDR600	Wetland Status	Upland	Vegetation Type	Closed Tall Alder Willow Shrub	
Plot Type	FVP: Field Verification Point	NWI Classification	NWI Classification		61.87569	
Plot Date	lot Date 9/18/2022 HGM		N/A	Longitude (DD)	-162.05084	

Photo Type: Vegetation

Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation

Submission Complete

CWA 401 Prefiling Meeting Request

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





Department of Transportation and Public Facilities

NORTHERN REGION Design & Engineering Services

> 2301 Peger Road Fairbanks, AK 99709-5316 Main: 907-451-2273 Fax: 907-451-5126 TDD: 907-451-2363 dot.alaska.gov

January 4, 2023

Shannon Morgan, Northern Branch Chief U.S. Army Corps of Engineers-Alaska District, Regulatory Division JBER, P.O. Box 6898 Anchorage, AK 99506-0898 Email: <u>regpagemaster@usace.army.mil</u>

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.

"Keep Alaska Moving through service and infrastructure."

Project Description:

The project consists of the following work:

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

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

Material Sites and Construction Access

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

Estimated Project Duration

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

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

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

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

Table 1. Wetland Impacts

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,

Riett 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.

















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: <u>DEC-401Cert@alaska.gov</u> 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.

<u>Next Steps</u>: Submit this request form with as much information as possible along with any attachments such as drawings and or maps to <u>DEC-401Cert@alaska.gov</u>, 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 <u>https://dec.alaska.gov/water/wastewater/ fees#IP-Fee</u>. 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: X 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)

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

Applicant Information				Point	of Contact or	Agent Informati	ion	
Brett	Nelso	n						
First Middle	Last			First	N	liddle	Last	
AK Dept. of Transportat	ion & Public Fac	cilities						
Company	Title			Compar	У		Title	
2301 Peger Road	Fairbanks	AK	99709					
Mailing Address Street or PO Box	City	State	Zip	Mailing	Address or PO Box	City		State Zip
brett.nelson@alaska.gov	907-45	1-2238						
Email	Phone		Fax (optional)	Email			Phone	Fax (optional)
I hereby authorize upon request, supplementa	information in su	upport o	-		ion application	-	is applicati	ion and to furnish,
III. Name, Location, and	Description of I	Project	or Activity	[40CFR121.5(b)(2)]			
Marshall Airport Impro	vements							
Project Name or Title								
Project Name or Title address n/a	Ma	arshall		AK	99585	61.873500		-162.043300
	City	arshall		AK	99585 _{Zip}	Latitude		Longitude
address n/a Project Street Address (if applicable)	City	arshall		-				
address n/a Project Street Address (if applicable) Other Location Descriptions	City		25, 26, 31, 36	State		Latitude		Longitude
address n/a Project Street Address (if applicable)	City	arshall		-		Latitude		Lo

Direct	ions to	the site:						
Nature	e of Act	tivity (Deso	cription of project, include all featu	ires)				
Projec	t Purpo	DSE (Descril	be the reason(s) for discharge)					
For fill	materi	ial identif	y the material source:					
			g discharged and pe in cubic yards: Type		yd ³	Туре		yd ³
				Cille de la come de la				
Surfac	e area	in acres o	f wetlands or other waters	filled: Acres:			or, linear feet: _	
Is drec	lging in	volved?	□ Yes, □ No; If yes, how n	nuch?	acres and volume	yd³.		
a.	 Icth	o drodain	g considered a 🗌 new proj	ect or is it ma	intenance? If mainter	ance how fr	aquent?	
b.	Prop	osed Plac	cement of dredged material		dinates of placement area] In water,) D Othe		
							er	
		Latitude	Longitude	Latitude	Longitude	L	atitude	Longitude
c.			lysis been conducted of the		=	attach tier a	nalysis and sample	e results if any.
		-	ed no, this may later be requ ole of Tier analysis, see <u>EPA</u>			e District Civi	Works DMAAD Us	er Manual)
	-	-					I WOIKS DIVIIVIE US	
ls any	portior	n of the w	ork already complete? \Box '	Yes, 🗀 No If yes	, describe the comple	ted work:		
	•		tion and nature of any p		ge that may result	from the pr	oposed project	and the
			ving waters; [40CFR121.5(b)(4)] receiving waters, and geog		otentially affected by	the propose	ed discharge:	
					,,			
Locati	-		lischarge (Decimal Degrees, 5 place	es minimum), describe if	necessary:			
	Activ Dredge	Fill	Description		Receiving Waterbo	dy Name	Latitude	Longitude
a.								
b.								
c.								
d.								
e.								

Is the project within 1,500 feet of a known contaminated site: If yes, describe the identified contaminated site(s) or groundwa	
Parameter(s) of Concern : (check all that apply): Turbidity, Sedimen Identify the parameters of concern that may be present in your discharge. Consider i known respective concentrations, persistence, and potential impacts to the receiving receiving water.:	f other parameters may be present from past activities in the area. Describe if
Impaired Waters: Does a discharge of any parameter identified abor Category 4 [304(b)] or Category 5 [303(d)] in the current EPA approv Assessment Report? (See http://dec.alaska.gov/water/water-quality/impaired- If determined necessary and requested by the Department, subr the receiving water which meets the requirements of 18 AAC 70.	wed Alaska's Integrated Water Quality Monitoring and waters.aspx for the most recently approved report and category listings.) Image: Comparison of the most recently approved report and category listings.) nit sufficient and credible baseline water quality information for
Social or Economic Importance (18 AAC 70.016(c)(5): Provide inform or economic development. The applicant shall complete either a soc community in the area where the receiving water for the proposed (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 Describe (checked items above or attach as separate document)	cial OR economic importance analysis (or both) for each affected
V. Include a description of any methods and means propose measures planned to treat, control, or manage the disch	arge [40CFR121.5(b)(5)]
(Example: Provide a brief explanation describing how impacts to waters of t Include best management practices (BMPs) for sediment and erosion contr	

Would include but is not restricted Idresses of Adjoining Property Ov und. (if more than can be entered her Name(s) Address	wners, Lessees, Et	c. Whose Prope			listed in Section E	Frror! Reference s	ource not
Idresses of Adjoining Property Ov und. (if more than can be entered her Name(s) Address	wners, Lessees, Et	c. Whose Prope	rty Adjoir		listed in Section E	rror! Reference s	ource not
Idresses of Adjoining Property Ov und. (if more than can be entered her Name(s) Address	wners, Lessees, Et	c. Whose Prope	rty Adjoir		listed in Section E	Frror! Reference s	ource not
Idresses of Adjoining Property Ov und. (if more than can be entered her Name(s) Address	wners, Lessees, Et	c. Whose Prope	rty Adjoir		listed in Section E	Frror! Reference s	ource not
und. (if more than can be entered her Name(s) Address			1	ns the Waterbody(s)	listed in Section E	Error! Reference	ource not
Name(s) Address	re, please attach a su	applemental list)	b.				
Address			D.				
				Name(s)			
			_				
				Address			
City	State	Zip	-	City		State	Zip
			d.				
Name(s)			-	Name(s)			
Address			-	Address			
							_
City	State	Zip		City		State	Zip
Name(s)			_ f.	Name(s)			
Address			_	Address			
City	State	Zip	-	City		State	Zip
I. Attachments: (as much as ava			1				
Required for the §401 Certific permit application requiring a contemporaneous with the s 15.180) Figures and/or Drawings/Plai Tier Analysis of dredged mate Sampling Results Baseline Water Quality Inform Other/Comments	certification und ubmission of the n Sets erial	ler 33 U.S.C. 13	341 (CWA	A §401) to include a	all accompanying	g information,	

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 <u>DEC-401Cert@alaska.gov</u>.

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 <u>https://dec.alaska.gov/water/wastewater/fees#IP-Fee</u>
Instructions for Preparing a Pre-meeting Request for CWA §401 Certification for an Individual Permit or License

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

For more information regarding CWA §401 Certifications, see the DEC website at 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: <u>DEC-401Cert@alaska.gov</u> Phone: 907-269-6285

Submit the CWA §401 Pre-Filing Meeting Request to <u>DEC-401Cert@alaska.gov</u>. 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 <u>https://dec.alaska.gov/water/wastewater/fees#IP-Fee</u>

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

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

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		LICATION COMPLETE
		(ITEMS BELOW TO BE	FILLED BY AP	PLICANT)		
5. APPLICANT'S NAME		· · · · · · · · · · · · · · · · · · ·	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)			
First - Brett	Middle -	Last - Nelson	First - same Middle - Last -			t -
Company - Alaska Dept. Transportation and Public Facilities			Company -			
E-mail Address - brett.ne	elson@alaska.gov		E-mail Addres	S -		
6. APPLICANT'S ADDR	ESS:		9. AGENT'S	ADDRESS:		
Address- 2301 Peger I	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. Busine	SS (c. Fax
		STATEMENT O	AUTHORIZAT	ION		
11. I hereby authorize, _ supplemental inform	ation in support of this	permit application.		processing of this appli	cation and to furr	iish, upon request,
		SIGNATURE OF APPLIC	CANT	DATE		
	N	AME, LOCATION, AND DESCR	IPTION OF PRO	JECT OR ACTIVITY		
12. PROJECT NAME O Marshall Airport Imp	•	ons)				
13. NAME OF WATERB	ODY, IF KNOWN (if a	applicable)	14. PROJECT	T STREET ADDRESS (i	if applicable)	
Poltes Slough/Yukon	River		Address N/A	A		
15. LOCATION OF PRO	JECT					
Latitude: ∘N 61.8735	Longi	tude: •W -162.0433	City - Marsh	all	State- Alaska	Zip- 99585
16. OTHER LOCATION	DESCRIPTIONS, IF I	KNOWN (see instructions)				
State Tax Parcel ID	State Tax Parcel ID Municipality Marshall (Kusilvak Census Area)					
Section - 25, 26, 31, 3	6 Township -	· 21 N	Range	e - 69 W, 70 W		
ENG FORM 4345, F	EB 2019	PREVIOUS E	DITIONS ARE O	BSOLETE.		Page 1 of 3

3. DATE RECEIVED 4. DATE APPLICATION COMPLETE

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 Discharg	ed 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, Minimiza See attached supplemental informa	tion, and Compensation (see instructions) tion.		

24 Is Any Portion of the	Work Already Complete?	Yes No IF YES, D	ESCRIBE THE COMPLE		
-					
N/A					
25. Addresses of Adjoin	ing Property Owners, Lessees	, Etc., Whose Property Ad	joins the Waterbody (if mor	e than can be entered here, please atta	ach a supplemental list).
			-		,
a. Address- Yukon De	lta National Wildlife Refu	ge: 807 Eddie Hoffman	State Highway		
City - Bethel		State - A	laska	Zip - 99559	
eny Bether			lubku	—·P	
b. Address- Village of	Marshall: 50 Yukon Aven	ue			
City - Marshall		State - A	laska	Zip - 99585	
c Addross Hunter Net	tive Alletment Airport Ac	and Dood			
c. Address- Humer Na	tive Allotment-Airport Aco	cess Road			
City - Marshall		State - A	laska	Zip - 99585	
d. Address-					
City -		State -		Zip -	
e. Address-					
City -		State -		Zip -	
26 List of Other Certific	ates or Approvals/Denials reco	aived from other Federal S	tate or Local Agencies fo	r Work Described in This An	dication
AGENCY	TYPE APPROVAL*	IDENTIFICATION	DATE APPLIED	DATE APPROVED	
AGENCI	TTPE APPROVAL	NUMBER		DATE AFFROVED	DATE DENIED
SHPO	Section 106				
COE	404 IP Permit				
ADEC	410 Water Cert				
	·			·	
FAA	4(f) approval				
* Would include but is no	ot restricted to zoning, building	, and flood plain permits			
27. Application is hereby	y made for permit or permits to	authorize the work descril			
complete and accurate. applicant.	I further certify that I possess	the authority to undertake t	he work described herein	or am acting as the duly auti	norized agent of the
Brett Nelson	Digitally signed by Brett Nelson DN: on=Brett Nelson, o=DOT&FF, ou=Northern Region, email=brett.nelson@alask o=US	12/30/2022			
	RE OF APPLICANT	DATE	SIGNATU	JRE OF AGENT	DATE
The Application must	be signed by the person w	no desires to undertake	the proposed activity (applicant) or it may be sig	ned by a duly
authorized agent if the	e statement in block 11 has	been filled out and sigr	ied.		
18 U.S.C. Section 100)1 provides that: Whoever,	in any manner within th	e iurisdiction of any de	partment or agency of the	United States
knowingly and willfully	falsifies, conceals, or cove	ers up any trick, scheme	, or disguises a materi	al fact or makes any false	fictitious or fraudulent
	ntations or makes or uses		•	•	us or fraudulent
statements or entry, s	hall be fined not more than	\$10,000 or imprisoned	not more than five yea	rs 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 NameLast NameBrettNelson

Title *Regional Environmental Manager*

Organization Name Alaska Department of Transportation

Phone TypeNumberExtensionBusiness907-451-2238Email

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 NameLast NameElizabethMiller-Chapman

Title Administrative Assistant II

Organization Name Alaska Department of Transportation

Phone TypeNumberExtensionBusiness907-451-5420Email
elizabeth.milller1@alaska.govMailing Address2301 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 <u>DSM - Lat/Long converter</u>

Project Location

61.8735000000001,-162.043300000000

address n/a, Marshall, AK

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

PLSS Location (Public Land Survey System)

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

Directions to Site

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

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

The project consists of the following work:

- Rehabilitate the existing runway, taxiway, and apron.
- Reconstruct failing embankment shoulders and flatten slopes. Re-establish as-built drainage and re-grade ditch on the south side of the runway.

• Rehabilitate and widen the airport access road. The existing road varies from 14-foot to 18-feet wide and will be widened to a consistent 18 feet wide.

• Replace existing culverts along the airport access road in approximately the same location and depth. (see Figure 2, culvert locations are in blue).

- Replace FAA runway end identifier lights (REILs) (in the same locations.)
- Replace airport lighting, segmented circle, and navigational aids.
- Rehabilitate the existing SREB and pad.

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

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

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

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

Discharge Information

For fill material, identify the material source

Fill will come from a contractor furnished material site.

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

Туре	Cubic Yards
Gravel	75.800

Surface area in acres of wetlands or other waters filled

Surface Area	Units
9.3	Acres

Is this a linear project? NONE PROVIDED

Is dredging involved? No

Is any portion of the work already complete? 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

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

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

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. <u>https://dec.alaska.gov/water/water-quality/integrated-report/</u>

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	Identification	Date	Date	Date
	Approval*	Number	Applied	Approved	Denied

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

*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)

<u>Att 1-Marshall Airport IP App Form.pdf - 01/12/2023 08:26 AM</u> Comment NONE PROVIDED

Figures and/or Drawings/Plan Sets

<u>Att 2-Marshall Airport wetland figures.pdf - 01/12/2023 08:30 AM</u> **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:	<u>Jensen, Melissa L (DOT); bre.klayum@mail.house.gov; Simone.Auger@mail.house.gov;</u> Logan.Basner@mail.house.gov; Josh.Revak@mail.house.gov; Alex.Ortiz@mail.house.gov;
	<u>carrie_keil@sullivan.senate.gov; services@murkowski.senate.gov; Alex.Oruz@mail.nouse.gov;</u>
	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);
	nymarshallmanager@gmail.com; admin@ohogtc.net; office@maserculig.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@aktr.com;
	greenbaumJ@akrr.com; alexandre.Lai@alveska-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; donkielv@computer.org; ikorhonen@earthjustice.org;
	ssaunders@earthjustice.org; LaCroix.Matthew@epa.gov; 404PNS-R10-OW@epa.gov; morgante.louis@epa.gov;
	evak@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;
	<u>mbarney@concretetech.com; monty.rogers@gmail.com; nsw@alaskan.com; nmfs.akr.habitat@noaa.gov;</u>
	julie.scheurer@noaa.gov; greg.balogh@noaa.gov; Emily_A_Johnson@nps.gov; bella_furr@nps.gov;
	<u>leah_schofield@nps.gov; pammillerarctic@gmail.com; PLavin@defenders.org; peter.Nagel@alveska-pipeline.com;</u>
	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; https://www.ucitation.org Autors Datist Alles Chullet Date (CEDA (UCA)) Descuencies Date Date (CEDA)
Cc:	Atkins, Patrick Allen CIV USARMY CEPOA (USA); Pagemaster, Reg POA
Subject:	POA-2006-00200, Marshall Airport, Poltes Slough
Date:	Wednesday, March 15, 2023 2:40:59 PM
Attachments:	POA-2006-00200 PoltesSlough PN.pdf

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

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

PUBLIC NOTICE DATE: March 15, 2023

EXPIRATION DATE: April 14, 2023

REFERENCE NUMBER: POA-2006-00200

WATERWAY: Poltes Slough

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

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

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

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

CONTACT: Please contact Allen Atkins at (907) 753-2780, toll free from within Alaska at (800) 478-2712, by fax at (907) 753-5567, or by email at <u>patrick.a.atkins@usace.army.mil</u>, 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 <u>regpagemaster@usace.army.mil</u>. All comments should include the Public Notice reference number listed above.

Please do not reply to this email.

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

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

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

From:	Brase, Audra L (DFG)
То:	Atkins, Patrick Allen CIV USARMY CEPOA (USA); regpagemaster@usace.army.mil
Cc:	<u>Jensen, Melissa L (DOT); Nelson, Brett D (DOT)</u>
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

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

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

PUBLIC NOTICE DATE: March 15, 2023

EXPIRATION DATE: April 14, 2023

REFERENCE NUMBER: POA-2006-00200

WATERWAY: Poltes Slough

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

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

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

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

CONTACT: Please contact Allen Atkins at

(907) 753-2780, toll free from within Alaska at (800) 478-2712, by fax at (907) 753-5567, or by email at <u>patrick.a.atkins@usace.army.mil</u>, 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 <u>regpagemaster@usace.army.mil</u>. All comments should include the Public Notice reference number listed above.

Please do not reply to this email.

The full text of this public notice, as well as associated maps and drawings, are available on our website at: http://www.poa.usace.army.mil/Missions/Regulatory/PublicNotices.aspx

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******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)
То:	<u>Nelson, Brett D (DOT), Jensen, Melissa L (DOT)</u> , <u>Martin, Kerri L (DOT)</u>
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

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

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

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)
То:	<u>Jensen, Melissa L (DOT)</u>
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