

Jurisdictional Determination Report

Port Lions Airport Improvements Project (Z527960000)

Alaska Department of Transportation and Public Facilities – Southcoast Region

Port Lions, Alaska January 25, 2019

Prepared for: Alaska Department of Transportation and Public Facilities - Southcoast Region 6860 Glacier Highway Juneau, Alaska 99881-2506



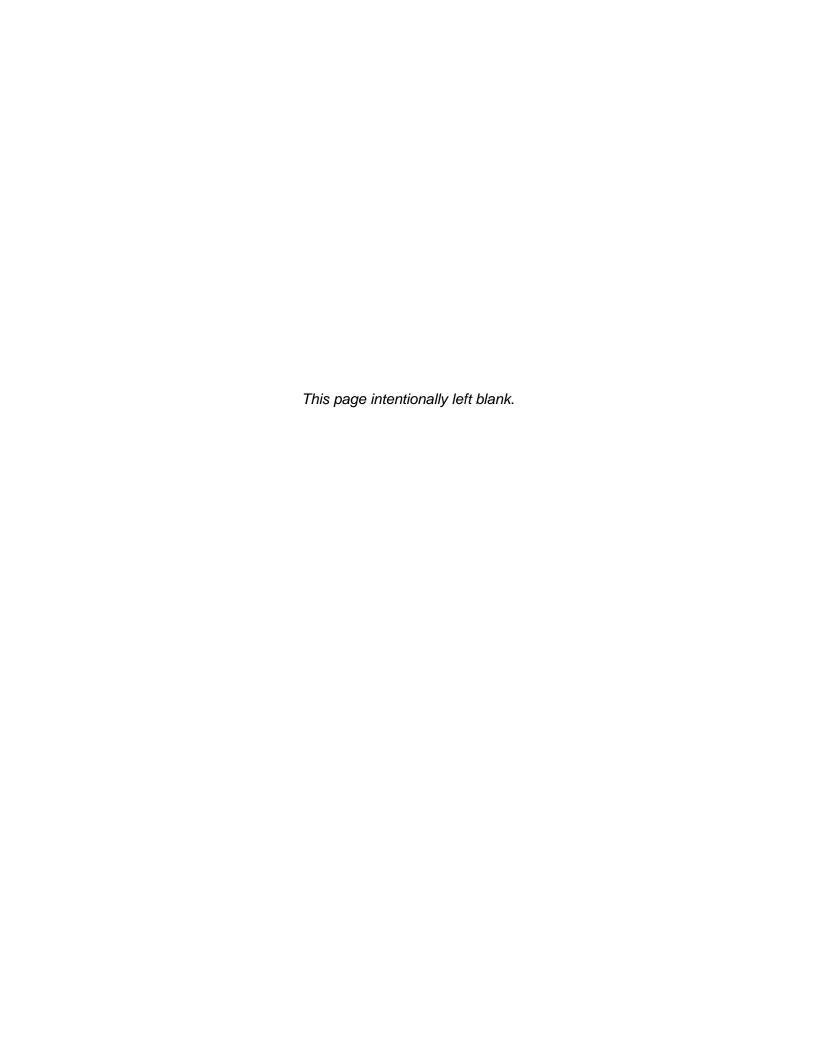


Table of Contents

1.0	Introduction and Purpose	. 1
2.0	Methods	. 2
2.1.	Field Work	2
2.2.	Wetland Mapping and Classification	3
3.0	Summary of Wetland Indicators	4
3.1.	Vegetation	4
3.2.	Soils	5
3.3.	Hydrology	. 5
4.0	Wetland and Waterbody Mapping Results	7
5.0	Wetland and Waterbody Classification	11
5.1.	Palustrine Forested Wetlands	11
5.2.	Palustrine Scrub-Shrub Wetlands	11
5.3.	Palustrine Emergent Wetlands	11
5.4.	Streams	11
5.5.	Estuarine Waters	12
5.6.	Uplands	12
6.0	Jurisdictional Determination	13
7.0	References	15
Tabl	es	
Table	Dominant Plants at Wetland Determination Form Sites	5
Table	2. Mapping Summary	. 0
Table	3. Stream Mapping Summary	10
Inse	ts	
Inset	1. Study Area Location	. 1
Inset	2. 2018 Monthly Precipitation at Kodiak Airport Compared to Expected Range of	
	Precipitation	. 6



Figures

Figure 1. Vicinity Map

Figure 2. Study Area Overview and NWI Mapping

Figure 3. Wetland and Waterbody Mapping

Appendices

Appendix A. Wetland Determination Forms and Photographs

Appendix B. Observation Points and Photographs

Abbreviations and Acronyms

ADF&G Alaska Department of Fish and Game

CWA Clean Water Act

DEM Digital Elevation Model

DOT&PF Alaska Department of Transportation and Public Facilities

GIS Geographic Information System

GPS global positioning system

HDR HDR, Inc.

HGM hydrogeomorphic HUC hydrologic unit code

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory
PEM palustrine emergent [wetland]
PFO palustrine forested [wetland]
PSS palustrine scrub-shrub [wetland]
USACE U.S. Army Corps of Engineers

USEPA U.S Environmental Protection Agency

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

WOUS Waters of the U.S.



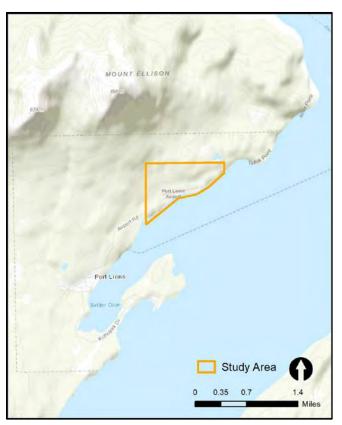
1.0 Introduction and Purpose

The State of Alaska Department of Transportation and Public Facilities (DOT&PF) Southcoast Region is proposing to realign and lengthen the Port Lions Airport runway safety area and conduct other improvements that would address functional, operational, and safety needs to bring the airport into compliance with Federal Aviation Administration and DOT&PF standards. This project requires authorization from the U.S. Army Corps of Engineers (USACE) for work in wetlands or waterbodies. To assist in regulatory permitting activities required for construction, DOT&PF contracted HDR, Inc. (HDR) to conduct wetland and waterbody mapping for the project.

This report identifies wetlands and waterbodies within the study area. Wetlands and waterbodies identified in this report are potentially subject to jurisdiction of the USACE under the authority of Section 404 of the Clean Water Act (CWA) of 1972 (as amended) or Section 10 of the Rivers and Harbors Act of 1899.

The study area is located in the community of Port Lions on the north coast of Kodiak Island, 19 miles west-northwest of the City of Kodiak (Figure 1). The study area is situated on the shore of Settler Cove in Kizhuyak Bay at the base of Mount Ellison (Inset 1). The 331-acre study area includes the existing airport and the proposed airport realignment boundary, as well as potential material sites and waste areas.

The study area is located within the Alaska Peninsula Mountains ecoregion (USACE 2007). The approximate center of the study area is at 57.884954° North latitude and 152.847819° West longitude (NAD83) and is found on the Kodiak D-3 U.S. Geological Survey (USGS) quadrangle, within Township 26 South, Range 22 West, Sections 27, 28, 33, and 34 (Seward Meridian). The study area is within 12-digit hydrologic unit code (HUC) watershed 190807011305, Settler Cove-Frontal Kizhuyak Bay (USGS 2018).



Inset 1. Study Area Location



2.0 Methods

2.1. Field Work

A wetland delineation was previously completed for a portion of the study area in 2006 based on a field survey conducted on October 8 and 9, 2003 (HDR 2006). This field survey collected information using standard Wetland Determination Forms from the 1987 Wetlands Delineation Manual (USACE 1987). This data was reevaluated prior to the 2018 field work using the updated methods in the 2007 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (2007 Regional Supplement, USACE 2007); all conclusions of the previously completed Wetland Determination Forms are supported using the current wetland delineation methodology. However, sufficient data was collected in 2018 to characterize the current conditions of the study area and, as a result, the 2003 data are not included in this report.

On May 7, 2018, Mac Salway (Professional Wetland Scientist No. 1762) of HDR conducted a preliminary reconnaissance of the study area. During this field survey information was primarily collected on streams. A biologist from the Alaska Department of Fish and Game (ADF&G) also visited the site on May 7, 2018, and sampled three streams near the airport for fish (ADF&G 2018a).

From July 19 to 24, 2018, Mac Salway, Mike Duffy of Michael Duffy Biological Consulting Services, and Emily Haynes of DOT&PF conducted an on-site investigation of wetlands and waterbodies in the study area. Soil conditions, hydrology, and plant communities were studied using methods described in the 1987 *Wetlands Delineation Manual* and the 2007 *Regional Supplement* (USACE 1987, 2007). The field work occurred within the USACE's recommended growing season for the Alaska Peninsula Mountains ecoregion in which the study area is located (May 15 to October 1; USACE 2007). Additional data on wetland functions and services was also collected during the field investigation and is included in the Wetland and Waterbody Functional Assessment Report for the project (HDR 2019).

Wetlands were identified where wetland scientists observed indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. If any of the three requirements were not met under normal conditions, the site did not meet the USACE criteria for being classified as a wetland. Sites were characterized by completing standard USACE Wetland Determination Forms (2007 Regional Supplement). Photographs and observational data were collected at additional locations (Observation Points) to document sites that exhibited characteristics similar to those of areas where a data form had already been completed, or to document the presence (or absence) of a waterbody or stream.

Where feasible, wetland/upland boundaries were determined in the field by completing paired data plots. This process involved completing Wetland Determination Forms near observable transition zones between wetter and drier areas. A Wetland Determination Form was completed in the wetter area to verify its wetland status, and then a second Wetland Determination Form was completed in the drier area to verify its upland status. The wetland/upland boundary between the two data plots was then identified and marked on field maps.



Wetland Determination Forms were completed at 22 sites (Appendix A). Observation Points were collected at an additional 56 locations (Appendix B). Locations of Wetland Determination Form sites and Observation Points were logged into a handheld global positioning system (GPS) unit. In total, field data was collected at 78 locations during the 1-day site reconnaissance in May and the 6-day site visit in July.

2.2. Wetland Mapping and Classification

Upon returning from the field, scientists analyzed field-collected data and reviewed the following datasets in a Geographic Information System (GIS) to delineate and classify wetlands and waterbodies in the study area:

- Color digital ortho-rectified aerial photography at a 0.25-foot ground pixel resolution, provided by DOT&PF (DOT&PF 2018a)
- Digital Elevation Model (DEM) raster dataset at a 1-foot ground pixel resolution, provided by DOT&PF (DOT&PF 2018b)
- National Hydrography Dataset (USGS 2018)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping for USGS quadrangle Kodiak D-3 (USFWS 2018; Figure 2)
- ADF&G Port Lions Airport Trip Report (ADF&G 2018a)
- ADF&G Anadromous Waters Catalog (ADF&G 2018b)

Detailed soil survey mapping from the Natural Resources Conservation Service (NRCS) is not available for the study area location.

GPS locations of field-visited sites were overlaid on the aerial photography and other data layers in GIS to identify and classify wetlands and waterbodies present within the study area. Aerial photography vegetation signatures from these field-visited sites were then extrapolated to similar locations throughout the study area, and wetland/upland boundaries were digitized into GIS. Delineating wetlands from aerial photography includes the following methods:

- Vegetation clues: Scientists examine aerial photographs for saturation-adapted vegetation communities, indicative canopy structure and height, and presence of hydrophytic plant species.
- Evidence of soil saturation: A site's proximity to streams, open water habitat, and marshes can be indicative of shallow subsurface water. Scientists therefore look for visible evidence of wetland hydrology, including surface water and darker areas of photos that indicate surface saturation.
- Topography: Evidence of topographic high points and sloped surfaces that would allow soils to drain supports the classification of those areas as upland. Topographic depressions, toes of slopes, and flat topography serve as indicators of potentially poor soil drainage.

Wetlands were classified based on a review of field notes, data forms, and site photographs. Mapped polygons identifying homogeneous wetland and waterbody areas in the GIS-based mapping were attributed with NWI mapping codes based on the USFWS' Classification of Wetlands and Deepwater Habitats of the U.S. (Cowardin et al. 1979). Mapped polygons were



also assigned a hydrogeomorphic (HGM) class based on landscape position (Brinson 1993). Streams were mapped as polygons when a stream channel was visible on aerial imagery; otherwise, streams were mapped as line features.

The study area includes portions of the nearshore estuarine waters of Settler Cove. The highest high tide measured at the Port Lions tidal station was 12.18 feet above mean lower-low water (NOAA 2018). The limit of estuarine waters was delineated using the 12-foot elevation contour derived from the DEM dataset provided by DOT&PF.

3.0 Summary of Wetland Indicators

The vegetation, hydrology, and soil conditions described below are based on the field investigation described in Section 2.1. Wetland conditions were documented at 11 of the 22 Wetland Determination Form sites visited. The remaining 11 sites were determined to be upland. Many of these upland sites met the criteria for hydrophytic vegetation, but lacked hydric soil and/or wetland hydrology indicators. The completed Wetland Determination Forms, photographs taken at each site, and tables summarizing the data collected at each site are included in Appendix A.

A total of 56 Observation Points were also documented. Observational data collected at these points includes the wetland or upland status, a description of field indicators of wetland functions, a description of the vegetation community, and/or documentation of the presence of a waterbody or stream. A table summarizing the data collected at each Observation Point and photographs are included in Appendix B. Locations of all sites visited in the field are shown on Figures 2 and 3.

3.1. Vegetation

Vegetation in the study area consists primarily of open Sitka spruce and mixed Sitka spruce-Kenai birch forests, willow and alder dominated scrub, and mesic herb meadows. Table 1 lists the dominant plant species observed at the 22 sites where Wetland Determination Forms were completed. Synonyms of plant species names that were recorded in the field on Wetland Determination Forms are also included in Table 1. The dominant plant species were identified using the "50/20 Rule" from the 2007 *Regional Supplement* (USACE 2007). The Viereck Level III (Viereck et al. 1992) vegetation communities documented at the Wetland Determination Form sites are included in Appendix A. A complete list of all plant species identified at Wetland Determination Form sites is also included in Appendix A.

A total of 18 sites where Wetland Determination Forms were completed had plant communities dominated by hydrophytes. A total of 9 sites were determined to have hydrophytic vegetation based on both the Dominance Test and Prevalence Index, while 9 were determined to be hydrophytic based on the Dominance Test alone.

Table 1. Dominant Plants at Wetland Determination Form Sites

Species	Common Name	Indicator Status ^a	Species	Common Name	Indicator Status ^a	
Alnus sinuata	Sitka alder	FAC	Equisetum arvense	Field horsetail	FAC	
Arnica chamissonis	Leafy leopardbane	FACW	Gymnocarpium dryopteris	Northern oak fern	FACU	
Athyrium cyclosorum (Athyrium felix-femina)	Western lady fern	FAC	Myrica gale	Sweetgale	OBL	
Betula kenaica	Kenai birch	FACU	Oplopanax horridus	Devil's-club	FACU	
Calamagrostis canadensis	Bluejoint reedgrass	FAC	Picea sitchensis	Sitka spruce	FACU	
Carex disperma	Soft-leaf sedge	FACW	Rosa nutkana	Nootka rose	FACU	
Carex limosa	Mud sedge	OBL	Rubus spectabilis	Salmonberry	FACU	
Carex lyngbyei	Lyngbye's sedge	OBL	Salix barclayi	Barclay's willow	FAC	
Circaea alpina	Small enchanter's- nightshade	FACW	Salix pulchra	Diamond-leaf willow	FACW	
Comarum palustre	Marsh five-finger	OBL	Salix sitchensis	Sitka willow	FAC	
Deschampsia cespitosa ssp. beringensis	Bering's tufted hairgrass	FAC	Sanguisorba canadensis	Canadian burnet	FACW	
Dryopteris expansa	Spreading wood fern	FACU	Swertia perennis	Felwort	FACW	

^a Wetland Indicator Status (Lichvar et al. 2016). FAC (Facultative): species equally likely to occur in wetlands and non-wetlands; FACU (Facultative Upland): species usually occurs in non-wetlands; FACW (Facultative Wetland): species usually occurs in wetlands; OBL (Obligate): species almost always occurs under natural conditions in wetlands.

3.2. Soils

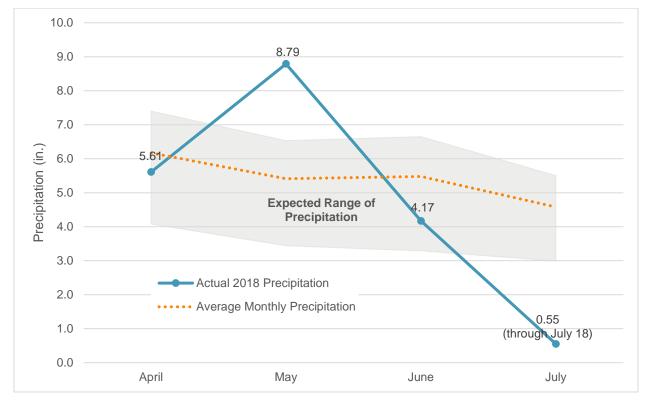
Detailed NRCS soil mapping does not exist for the study area location. Site-specific soil characteristics were documented at each of the 22 Wetland Determination Form sites. Hydric and non-hydric soils documented in the study area contain thick horizons of ash (ranging from 5 to 12 inches) deposited after the 1912 Novarupta-Katmai volcanic eruption. Hydric soils were found at 11 of the 22 sites. All locations with hydric soil indicators were determined to be wetland. Hydric soil indicators observed at each site are summarized in Appendix A. The most common hydric soil indicator observed was the presence of hydrogen sulfide odor (10 sites), followed by Alaska Redox (9 sites).

3.3. Hydrology

Precipitation data for the 3 months prior to the field investigation was reviewed to determine the degree to which recent weather (e.g., abnormal wet or dry conditions) had influenced field hydrology. Climate data for the surrounding region was obtained for the Kodiak Airport station, located approximately 19 miles east-southeast from the study area (NRCS 2018). This station has been collecting precipitation data since 1931. The monthly precipitation totals for the 3 months



preceding the July field visit were compared to monthly totals for 1987 to 2017 to establish an expected range of precipitation, per the NRCS *Engineering Field Handbook* method (NRCS 1997). The lower limit of the expected range of precipitation includes the lowest 30 percent of monthly precipitation values, while the upper limit includes the highest 30 percent of monthly precipitation values for the past 30 years. The results of this comparison are shown in Inset 2.



Inset 2. 2018 Monthly Precipitation at Kodiak Airport Compared to Expected Range of Precipitation

Using the NRCS method, it was determined that the precipitation during the 3 months prior to the July field investigation was within the expected range of precipitation. Precipitation in May was above the upper limit of expected precipitation, but precipitation levels in April and June were close to the monthly averages. Less than 2 inches of precipitation fell in the 4 weeks preceding the July fieldwork, less than normal for the region, which may have influenced the lack of primary hydrology indicators observed at some of the sites.

At six sites (Sites 004, 009, 011, 016, 032, and 035), hydrogen sulfide odor was detected in unsaturated soils, and at five of these sites (all except Site 009) the hydrogen sulfide odor was detected deeper than 12 inches in the soil profile. Hydrogen sulfide odor must be detected within 12 inches of the soil surface to apply the primary wetland hydrology indicator. At these five sites,

¹ Measured from the top of the mineral soil surface or the top of any organic soil layer, whichever is shallower.

² The requirements for the hydrogen sulfide odor hydrology indicator vary slightly from the hydrogen sulfide odor hydric soil indicator. These requirements are defined in the 2007 *Regional Supplement* (USACE 2007). To meet the hydrogen sulfide odor hydric soil indicator, hydrogen sulfide odor must be detected within 12 inches of the soil surface as measured from the top of the first mineral layer (underneath any and all organic



the hydrogen sulfide odor was noted at the interface of the ash (mineral) and buried organic soil horizons. Hydrogen sulfide is more likely to occur in organic soils and less likely to occur in fine volcanic ash, which rapidly conveys water. The soils at these sites were likely recently inundated for sufficient duration for reducing conditions to develop, and the drier than normal antecedent precipitation likely influenced the conditions observed during the field visit. At all six sites, wetland hydrology was determined to be positive through the presence of other primary hydrology indicators, or at least two secondary hydrology indicators.

Wetland hydrology (at least one primary hydrology indicator or at least two secondary hydrology indicators) was present at 12 of the 22 sites where Wetland Determination Forms were completed. Of the 12 sites determined to have wetland hydrology, primary hydrology indicators were observed at 7 sites, while secondary indicators alone were observed at 5 sites. Hydrology indicators observed at each site are summarized in Appendix A.

4.0 Wetland and Waterbody Mapping Results

Approximately 12.2 acres of wetlands were identified within the 330.7-acre study area. Wetland types include forested, scrub-shrub, and emergent wetlands. An additional 38.3 acres were identified as estuarine waters, 0.2 acre as tidally influenced streams, and 0.2 acre as perennial streams. The remaining 279.9 acres of the study area were determined to be upland. Wetland and waterbody classes found within the study area and acreages of each NWI classification are provided in Table 2. Additionally, 25,797 linear feet of perennial and intermittent streams were mapped as line features, summarized in Table 3.

Figure 3 displays wetland, upland, and waterbody boundaries; the boundaries between different wetland and waterbody types; and the linear paths of streams identified in the study area. Locations of the Wetland Determination Form sites and Observation Points are also shown.

7

material). To meet the hydrogen sulfide odor hydrology indicator, hydrogen sulfide odor must be detected within 12 inches of the soil surface as measured from the mineral soil surface or the top of any organic soil layer, whichever is shallower. Six of the ten sites where hydrogen sulfide odor was detected satisfy the depth requirements to meet the hydrogen sulfide odor hydric soil indicator, but not the hydrogen sulfide odor hydrology indicator.



This page intentionally left blank.



Table 2. Mapping Summary

NWI Code ^a	Description	Representative Data Form Sites	Representative Observation Points	Acres ^b
Forested Wet	lands			3.18
PFO1/4B	Saturated broad-leaved deciduous/needle-leaved evergreen forested wetland	035	-	1.48
PFO4/1B	Saturated needle-leaved evergreen/broad-leaved deciduous forested wetland	038	-	1.11
PFO4B	Saturated needle-leaved evergreen forested wetland	004	-	0.59
Scrub-Shrub	Wetlands			8.07
PSS1/EM1B	Saturated broad-leaved deciduous scrub-shrub/persistent emergent wetland	016, 032	-	0.57
PSS1/EM1C	Seasonally flooded broad-leaved deciduous scrub-shrub/persistent emergent wetland	006, 009, 031	-	4.57
PSS1C	Seasonally flooded broad-leaved deciduous scrub-shrub wetland	003, 011	-	2.59
PSS4/EM1B	Saturated needle-leaved evergreen scrub-shrub/persistent emergent wetland	-	-	0.34
Emergent We	tlands			0.91
PEM1F	Semi-permanently flooded persistent emergent wetland	039	-	0.91
			Total Wetlands	12.16
Estuarine Wa	ters			38.25
E1UBL	Subtidal estuarine water with an unconsolidated bottom	-	-	18.64
E2USP	Irregularly flooded intertidal estuarine unconsolidated shore	-	-	19.61
Streams				0.43
R1UBV	Permanently flooded tidal stream with an unconsolidated bottom	-	596, 597	0.22
R3UBH	Permanently flooded upper perennial stream with an unconsolidated bottom	-	025, 594, 595	0.21
			Total Waterbodies	38.68
		Total Wetl	ands and Waterbodies	50.84
Uplands				
U	Upland	001, 007, 010, 012, 013, 014, 021, 022, 023, 037, 040	005, 018, 041, 042, 561b, 576, 585, 587	279.91
			Total Uplands	279.91
			Total Mapped Area	330.74

^a Cowardin et al. 1979

^b Total acreage presented may not reflect the sum of the individual cells due to rounding.

Table 3. Stream Mapping Summary

NWI Code ^a	Description	Representative Observation Points	Linear Feet ^b
R3UBH	Permanently flooded perennial stream with an unconsolidated bottom	029, 036, 579, 580, 586, 591, 592, 597, 599	9,998°
R3UBH - culverted	Permanently flooded perennial stream routed through a culvert	593, 594, 598	178
R4SBC	Seasonally flooded intermittent streambed	002, 015, 017, 019, 020, 024, 026, 026b, 027, 028, 030, 033, 034, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 573, 574, 575, 588, 590	15,594
R4SBC - culverted	Seasonally flooded intermittent stream routed through a culvert	008	27
		Total Streams	25,797

^a Cowardin et al. 1979

^b Total linear feet presented may not reflect the sum of the individual cells due to rounding.

^c Does not include length of streams mapped as polygons presented in Table 2.



5.0 Wetland and Waterbody Classification

The following wetland classes and waterbody types were documented within the study area.

5.1. Palustrine Forested Wetlands

Palustrine forested (PFO) wetlands are found in the large slope wetland complex at the base of Mount Ellison, to the north and northeast of the airport runway. Forested wetlands were documented at three Wetland Determination Form locations (Sites 004, 035, and 038) and comprise 3.2 acres (1.0 percent of the study area). Documented communities include open Sitka spruce forest and open mixed needle-leaf and broadleaf forests co-dominated by Sitka spruce and Kenai birch. These communities have understories with sparse shrub cover and herbaceous species including bluejoint reedgrass, field horsetail, Lyngbye's sedge, and mud sedge. All forested wetlands within the study area have a saturated hydrologic regime. Hydrogen sulfide odor was noted at all three sites, and at two sites (Sites 035 and 038) a histic epipedon and the Alaska Redox hydric soil indicators were also present.

5.2. Palustrine Scrub-Shrub Wetlands

Palustrine scrub-shrub (PSS) wetlands are the most common wetland type mapped within the study area (8.1 acres, 2.4 percent of the study area). These communities were mapped in the large slope wetland complex at the base of Mount Ellison, and in small swales on the steep hillsides above the airport. Documented communities include open willow and willow-alder shrub, and sweetgale-sedge bogs. Trees are typically absent, or their cover is less than 25 percent. Vegetation in the shrub stratum is dominated by Barclay's willow, diamondleaf willow, Sitka alder, or sweetgale. Common emergent vegetation in the herbaceous stratum includes Lyngbye's sedge, marsh five-finger, bluejoint reedgrass, and Bering's tufted hairgrass.

The mapped scrub-shrub wetlands predominantly have a seasonally flooded hydrologic regime, indicated by the presence of multiple seeps and stream channels. The most commonly documented hydric soil indicators at scrub-shrub wetland sites were hydrogen sulfide odor and Alaska Redox.

5.3. Palustrine Emergent Wetlands

One palustrine emergent (PEM) wetland was mapped within the study area (0.9 acre, 0.3 percent of the study area) and represents the wettest portion of the large slope wetland complex. Trees and shrubs are absent, and vegetation is dominated by Lyngbye's sedge. The wetland has a semi-permanently flooded hydrologic regime. Multiple streams cross the wetland and flow to Settler Cove through a culvert under the road east of the runway. A histic epipedon, hydrogen sulfide odor, and Alaska Redox were documented as hydric soil indicators at this site (Site 039).

5.4. Streams

Three tidal streams were mapped where perennial flow enters Settler Cove (0.2 acre, 0.1 percent of the study area). These streams are tidally influenced channels with cobble and gravel substrates.



One larger perennial stream known locally as Airport Creek was mapped as a polygon (0.2 acre, 0.1 percent of the study area). This stream is 10 to 15 feet wide with cobble substrate and is included in the ADF&G *Anadromous Waters Catalog* as spawning habitat for pink salmon (ADF&G 2018b). The stream enters the study area from the west approximately 375 feet north of Airport Road and flows for approximately 1,300 feet before flowing through a culvert under Airport Road, ultimately discharging into Settler Cove. ADF&G biologists captured three young-of-year pink salmon in a pool below the culvert (ADF&G 2018a). All fish bearing streams are identified in the Wetland and Waterbody Functional Assessment Report (HDR 2019).

Multiple upper perennial and intermittent streams drain from the slopes of Mount Ellison through the study area to Settler Cove. Perennial streams (R3UBH) range from less than 1 foot to 10 feet wide, typically with cobble and gravel substrates. Approximately 10,176 linear feet of perennial streams were mapped (including streams routed through culverts). Intermittent streams (R4SBC) include small seep-fed channels with muck substrates and snow-melt fed channels ranging from 1 to 5 feet wide with cobble and gravel substrates. Approximately 15,621 linear feet of intermittent channels were mapped (including streams routed through culverts). Several intermittent streams were observed to end at the slope break at the base of Mount Ellison. Flow from these streams likely infiltrates into the thick layers of fine volcanic ash that was documented throughout the area, and likely continues as shallow subsurface flow before entering larger perennial streams, wetland complexes, or Settler Cove.

5.5. Estuarine Waters

The study area includes subtidal and intertidal estuarine areas of Settler Cove (38.2 acres, 11.6 percent of the study area). Subtidal areas (E1UBL) are permanently inundated waters that are flooded at all tides. Intertidal areas (E2USP) are mapped as irregularly flooded unconsolidated shore, and consist of unvegetated gravel and cobbles.

5.6. Uplands

Uplands (U) comprise the majority of the study area (280.1 acres, 84.7 percent of the study area). Mapped uplands include the steep hillsides and footslopes of Mount Ellison as well as filled areas of the airport runway and Airport Road. Vegetation communities in undisturbed uplands include open Sitka spruce forest, open Kenai birch forest, closed alder and/or willow shrub, and herbaceous meadows. Ten of the eleven uplands documented with Wetland Determination Forms lacked both wetland hydrology and hydric soils. Soil textures range from silty loams to gravels.

A small pond was documented north of the runway during the 2003 wetland field survey at the location where Sites 021 and 576 are currently located (HDR 2006). Photographs taken in 2003 show the area as inundated tall willows; however no wetland determination forms were completed. The area was visited twice in 2018, during both the May and July field surveys. The area was disturbed with the ash layer completely removed and overburden piles surrounding the area. The soil consisted of compacted gravel. No primary indicators of hydrology were observed during either site visit. A Wetland Determination Form (Site 021) was completed during the July field survey and the area was determined upland with hydrophytic vegetation and wetland hydrology, but no hydric soil indicators.



6.0 Jurisdictional Determination

The regulatory authority of Section 404 of the CWA, as administered by the USACE, has been subject to several lengthy legal reviews. In a 2006 decision on the consolidated cases *Rapanos v. United States* and *Carabell v. United States*, the U.S. Supreme Court addressed where the federal government can apply the CWA, specifically by determining whether a wetland or tributary is a Water of the U.S. (WOUS). On June 6, 2007, the U.S. Environmental Protection Agency (USEPA) and the USACE issued joint guidance to implement the court's decision. The USEPA and the USACE issued revised guidance on December 2, 2008 ("Rapanos guidance"; USEPA and USACE 2008). The Rapanos guidance is now used by USEPA regions and USACE districts to determine whether aquatic resources such as lakes, streams, and wetlands are WOUS subject to regulation under the CWA.

Under the Rapanos guidance, relatively permanent tributaries of navigable waters, and wetlands that directly abut such tributaries, are considered jurisdictional under Section 404 of the CWA. Jurisdiction over tributaries of navigable waters that are not relatively permanent and over wetlands that abut such tributaries is determined based on whether those areas have a significant nexus with a navigable water. Under the CWA, navigable waters are defined to include territorial seas (which are all ocean waters extending to 3 miles from the coastline).

The study area is within the Settler Cove-Frontal Kizhuyak Bay 12-digit HUC watershed and includes portions of Settler Cove, which is ocean waters included within the definition of territorial seas. Most of the wetlands and waterbodies mapped within the study area have a direct perennial or seasonal surface connection to Settler Cove and are likely to be considered WOUS subject to USACE jurisdiction.

Five intermittent streams within the study area are not directly connected to downstream wetlands or navigable waters. These streams are fed by snow melt and/or seeps, and flowing surface water is likely present for extended periods in the early growing season but absent by the end of the season. These streams end at the slope break at the base of Mount Ellison. One mapped wetland (described at Site 016) is contiguous to one of the intermittent streams.

One of these intermittent streams terminates at the material site north of the airport. The flow ends at Site 571 at an overburden pile at the edge of the material site where it infiltrates into the ground. The flow then re-channelizes at Site 573 into another intermittent stream immediately below the material site and flows east along the northern edge of the runway until it reaches a disturbance area, where it again infiltrates into the subsurface. Subsurface flow continues east until it reaches the wetland complex that has a direct connection to Settler Cove. These two intermittent streams were likely connected and likely flowed directly into Settler Cove prior to construction of the material site and airport runway.

The other three intermittent streams terminate at the slope break to the west of the large slope wetland complex. These streams likely infiltrate into the volcanic ash layer that is prevalent throughout the study area. Flow from these streams likely continues as shallow subsurface flow through the ash layer for approximately 250 to 400 feet before reemerging and forming the intermittent and perennial streams at the west end of the wetland complex. Information on the



connectivity of these three streams prior to the 1912 Novarupta-Katmai volcanic eruption that deposited ash throughout the area is not available.

Although five intermittent streams within the study area lack a direct connection to Settler Cove, there is evidence that they are connected to other relatively permanent tributaries of Settler Cove via shallow subsurface flow through the porous ash layer. This flow likely represents a significant nexus because it allows water to move readily between the intermittent streams and Settler Cove. All five streams also terminate within approximately 1,100 feet of Settler Cove. Because of the adjacency of these streams to Settler Cove, they would likely be considered "neighboring" a WOUS and therefore under USACE jurisdiction. The wetland contiguous to one of the intermittent streams would thus also likely be considered a WOUS.

All wetlands and waterbodies mapped within the study area, totaling 12.2 acres of wetlands and 38.2 acres of waterbodies (streams and estuarine areas), as well as 25,797 linear feet of perennial and intermittent streams, are preliminarily identified as jurisdictional under Section 404 of the CWA; however, the final determination of jurisdictional status lies with the USACE.

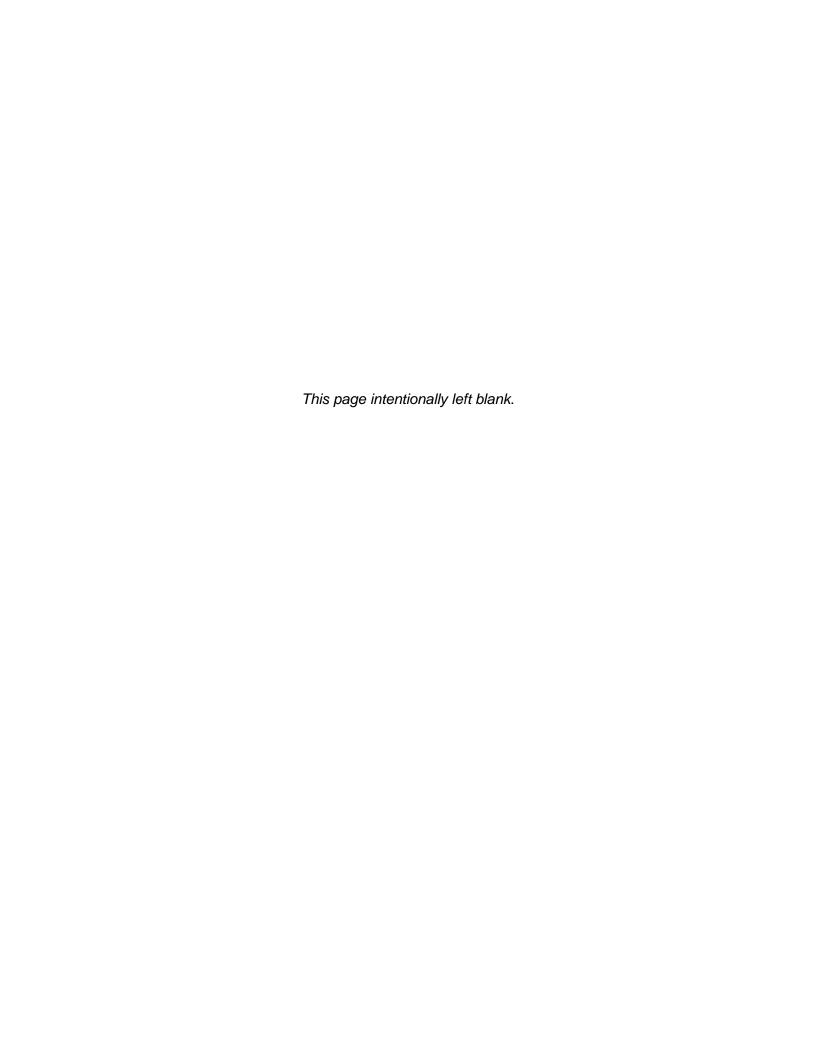
7.0 References

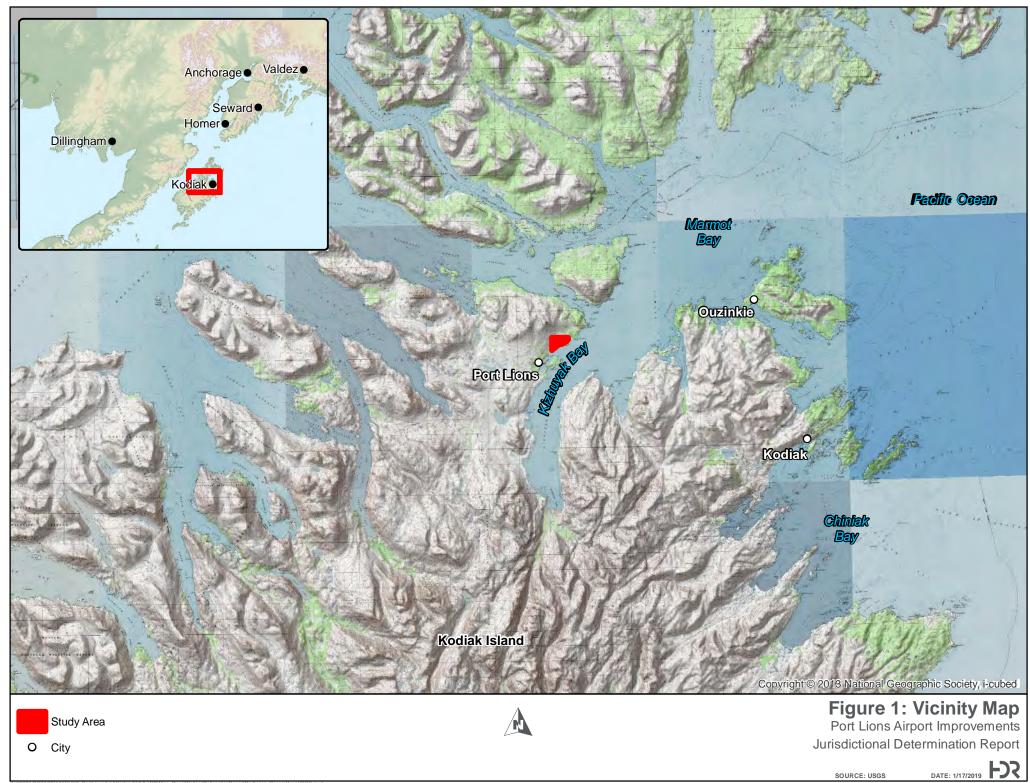
- ADF&G (Alaska Department of Fish and Game). 2018a. Memorandum from Will Frost, ADF&G Biologist, to John C. Barnett, DOT&PF Southcoast Regional Environmental Manager, titled "Trip Report Port Lions Airport May 2018." June 5, 2018.
- ——. 2018b. *Anadromous Waters Catalog*. Accessed at http://extra.sf.adfg.state.ak.us/FishResourceMonitor/?mode=awc on November 8, 2018.
- Brinson, M.M. 1993. A hydrogeomorphic classification for wetlands. WRP-DE-4. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, U.S. Fish and Wildlife Service, FWS/OBS-79-31. Washington, DC.
- DOT&PF (Alaska Department of Transportation and Public Facilities). 2018a. Digital color orthorectified aerial photography at a 0.25-foot ground pixel resolution. Provided to HDR in August 2018.
- ——. 2018b. Digital Elevation Model raster dataset, at a 1-foot ground pixel resolution. Provided to HDR in August 2018.
- HDR (HDR, Inc.). 2006. Port Lions Airport Master Plan Preliminary Jurisdictional Determination. Prepared for Federal Aviation Administration on behalf of State of Alaska Department of Transportation and Public Facilities, Central Region. Anchorage, AK. March 2006.
- 2019. Port Lions Airport Improvement Project Wetland and Waterbody Functional Assessment Report. Prepared for State of Alaska Department of Transportation and Public Facilities, Southcoast Region. Juneau, AK. January 25, 2019.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*. 2016 Wetland Ratings. *Phytoneuron* 2016-30: 1-17.
- NOAA (National Oceanic and Atmospheric Administration). 2018. Datums for 9457391, Port Lions, Alaska. Accessed at https://tidesandcurrents.noaa.gov/datums.html?id=9457391 on November 9, 2018.
- NRCS (Natural Resources Conservation Service). 1997. Hydrologic tools for wetland determination. *Engineering Field Handbook*, Chapter 19. Washington, DC.
- ——. 2018. WETS tables for Kodiak Airport. Accessed at http://www.wcc.nrcs.usda.gov/cgibin/getwetco.pl?state=ak on November 8, 2018. U.S. Department of Agriculture, National Water and Climate Center.
- USACE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*. Corps of Engineers Environmental Laboratory. Vicksburg, MS.



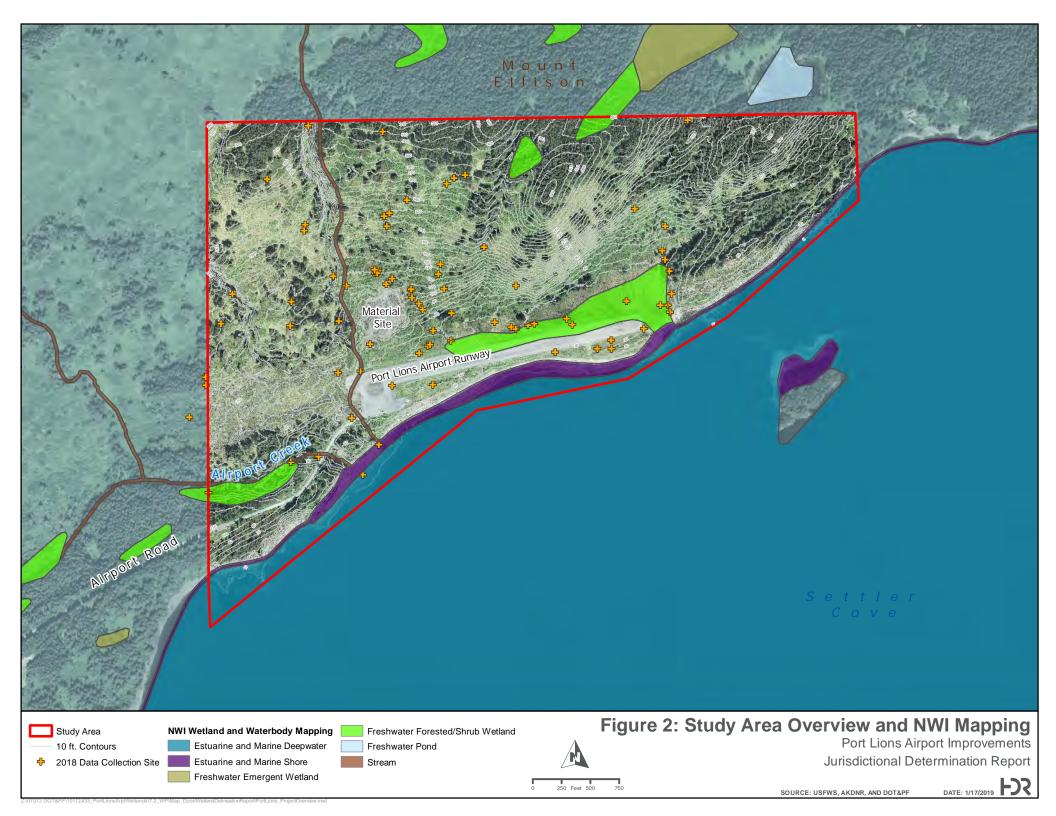
- ——. 2007. Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Alaska Region. Corps of Engineers Research and Development Center. Vicksburg, MS.
- USFWS (U.S. Fish and Wildlife Service). 2018. National Wetlands Inventory Mapping. Downloaded from http://enterprise.nwi.fws.gov/shapedata/alaska/ on February 12, 2018.
- USGS (U.S. Geological Survey). 2018. National Hydrography Dataset. Downloaded from https://nhd.usgs.gov/ on February 12, 2018.
- Viereck, L.A., C.T. Dyrness, A.R. Batten, and K.J. Wenzlick. 1992. The Alaska Vegetation Classification. General Technical Report PNW-GTR-286. U.S. Forest Service, U.S. Department of Agriculture.

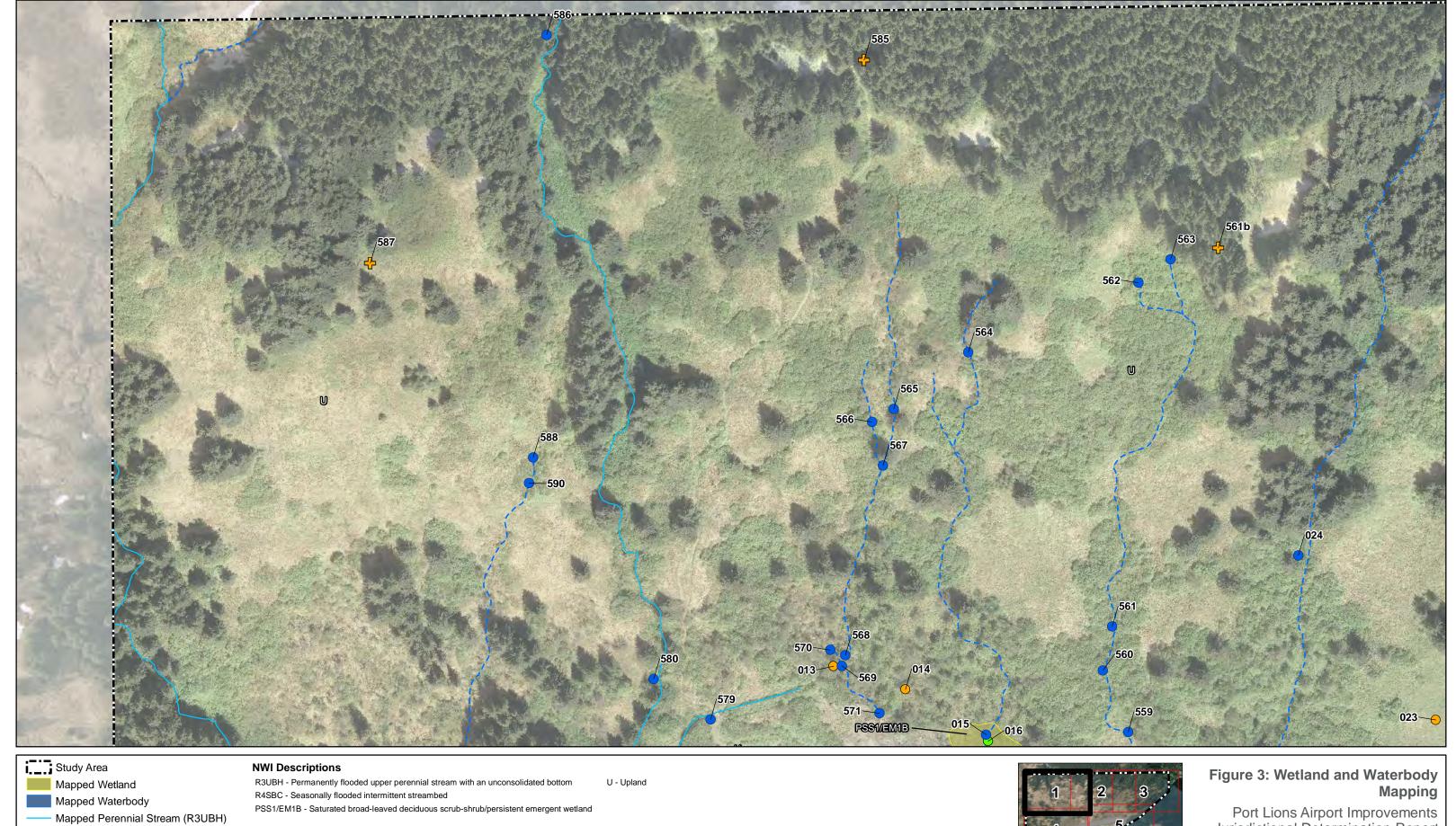
Figures

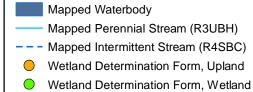




SOURCE: USGS







Stream Crossing

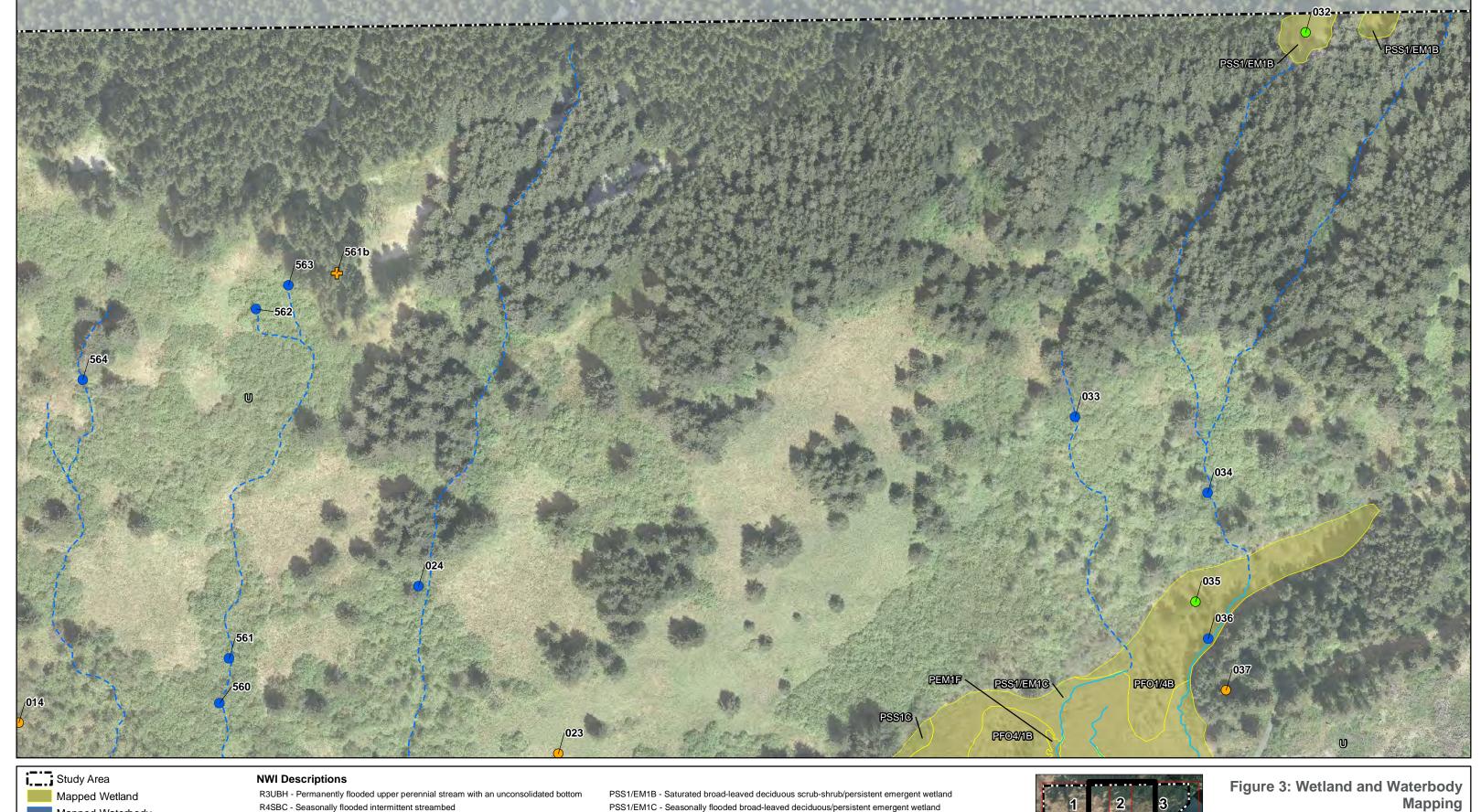


Port Lions Airport Improvements Jurisdictional Determination Report

Tile: 1 of 6



Observation Point, Upland





 Wetland Determination Form, Upland Wetland Determination Form, Wetland

PEM1F - Semi-permanently flooded persistent emergent wetland

PFO1/4B - Saturated broad-leaved deciduous/needle-leaved evergreen forested wetland

PFO4/1B - Saturated needle-leaved evergreen/broad-leaved deciduous forested wetland

PSS1/EM1C - Seasonally flooded broad-leaved deciduous/persistent emergent wetland PSS1C - Seasonally flooded broad-leaved deciduous scrub-shrub wetland U - Upland



Port Lions Airport Improvements Jurisdictional Determination Report

Tile: 2 of 6



Stream Crossing Observation Point, Upland





Wetland Determination Form, Wetland

R4SBC - Seasonally flooded intermittent streambed

E1UBL - Subtidal estuarine water with an unconsolidated bottom

E2USP - Irregularly flooded intertidal estuarine unconsolidated shore

PEM1F - Semi-permanently flooded persistent emergent wetland

PFO1/4B - Saturated broad-leaved deciduous/needle-leaved evergreen forested wetland

PSS1/EM1B - Saturated broad-leaved deciduous scrub-shrub/persistent emergent wetland PSS1/EM1C - Seasonally flooded broad-leaved deciduous/persistent emergent wetland PSS1C - Seasonally flooded broad-leaved deciduous scrub-shrub wetland U - Upland



Mapping

Port Lions Airport Improvements Jurisdictional Determination Report

Tile: 3 of 6



Stream Crossing





PSS1/EM1B - Saturated broad-leaved deciduous scrub-shrub/persistent emergent wetland U - Upland



Jurisdictional Determination Report

Tile: 4 of 6



Observation Point, Upland

Stream Crossing





Stream Crossing

Wetland Determination Form, Upland

Wetland Determination Form, Wetland

R4SBC - Seasonally flooded intermittent streambed

E1UBL - Subtidal estuarine water with an unconsolidated bottom

E2USP - Irregularly flooded intertidal estuarine unconsolidated shore

PEM1F - Semi-permanently flooded persistent emergent wetland

PFO1/4B - Saturated broad-leaved deciduous/needle-leaved evergreen forested wetland

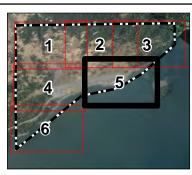
PFO4/1B - Saturated needle-leaved evergreen/broad-leaved deciduous forested wetland

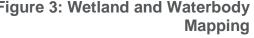
PSS1/EM1C - Seasonally flooded broad-leaved deciduous/persistent emergent wetland

PSS1C - Seasonally flooded broad-leaved deciduous scrub-shrub wetland PSS4/EM1B - Saturated needle-leaved evergreen/persistent emergent wetland

R1UBV - Permanently flooded tidal stream with an unconsolidated bottom

U - Upland





Port Lions Airport Improvements Jurisdictional Determination Report

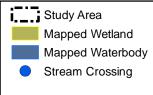
Tile: 5 of 6





Observation Point, Upland





E2USP - Irregularly flooded intertidal estuarine unconsolidated shore

R1UBV - Permanently flooded tidal stream with an unconsolidated bottom

U - Upland



Mapping

Port Lions Airport Improvements Jurisdictional Determination Report

Tile: 6 of 6



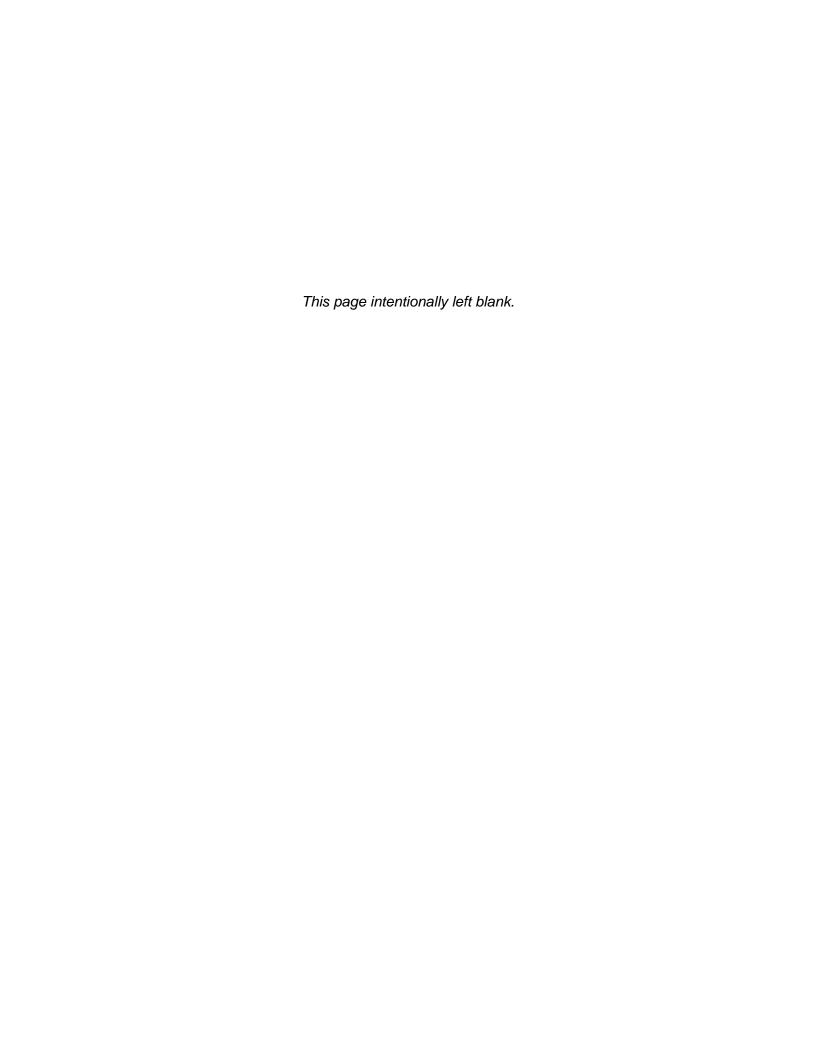
Feet DATE: 1/17/2019 **F)**

SOURCE: DOT&PF

Appendix A

Wetland Determination Forms and Photographs

July 19 and 22-23, 2018





Appendix A: Summary of Wetland Determination Form Sites

Site	Latitude	Longitude	NWI Code ^a	HGM Class ^b	Viereck Level III Code ^c
1	57.88550	-152.84679	U	N/A	IIB1
3	57.88557	-152.84576	PSS1C	Slope	IIB1
4	57.88567	-152.84432	PFO4B	Slope	IA2
6	57.88596	-152.83980	PSS1/EM1C	Slope	IIC2
7	57.88623	-152.83963	U	N/A	IIB2
9	57.88514	-152.84236	PSS1/EM1C	Slope	IIC2
10	57.88495	-152.84235	U	N/A	IIB1
11	57.88495	-152.84297	PSS1C	Slope	IIB1
12	57.88489	-152.84486	U	N/A	IIIA2
13	57.88683	-152.85281	U	N/A	IB2
14	57.88670	-152.85208	U	N/A	IIIB2
16	57.88640	-152.85123	PSS1/EM1B	Slope	IB3
21	57.88507	-152.85054	U	N/A	IIIB2
22	57.88519	-152.84950	U	N/A	IIB1
23	57.88648	-152.84656	U	N/A	IIIB2
31	57.88562	-152.85666	PSS1/EM1C	Slope	IIB2
32	57.89034	-152.83878	PSS1/EM1B	Slope	IIC2
35	57.88725	-152.84001	PFO1/4B	Slope	IC2
37	57.88676	-152.83971	U	N/A	IA2
38	57.88607	-152.84164	PFO4/1B	Slope	IC2
39	57.88613	-152.83981	PEM1F	Slope	IIIA3
40	57.88562	-152.84753	U	N/A	IIIA2

^a NWI: National Wetlands Inventory. Cowardin et al. 1979. See Table 3 for full descriptions.

^b HGM: Hydrogeomorphic. Brinson 1993 ^c Viereck et al. 1992



Appendix A: Summary of Wetland Indicators at Data Form Sites

		Veç	geta	tion			Soil			Hydrology													
										Primary Indicators Secondary Indicators													
Site	NWI Code ^a	Hydrophytic Dominants is > 50%	Prevalence Index is ≤ 3.0	Hydrophytic Vegetation Present?	Histosol or Histel (A1)	Histic Epipedon (A2)	Hydrogen Sulfide (A4)	Alaska Redox (A14)	Hydric Soil Present?	Surface Water (A1)	High Water Table (A2)	Saturation (A3)	Water Marks (B1)	Algal Mat (B4)	Iron Deposits (B5)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)	Oxidized Rhizospheres (C3)	Presence of Reduced Iron (C4)	Geomorphic Position (D2)	Positive FAC-Neutral Test (D5)	Wetland Hydrology Present?	Is the Site in a Wetland?
001	U	X	ш	Y	1			7	Z	0)		0)	^	7	=				ш.		Ь	N	N
003	PSS1C	Χ	Х	Υ				Х	Υ								Х	Х		Х	Х	Υ	Υ
004	PFO4B	Χ		Υ			Χ		Υ							b		Х		Х		Υ	Υ
006	PSS1/EM1C	Χ	Χ	Υ		Χ	Χ	Χ	Υ	Х	Χ	Х			Х	Х	Χ	Х	Х	Х	Х	Υ	Υ
007	U	Χ		Υ					N													N	Ν
009	PSS1/EM1C	Χ	Χ	Υ			Χ	Χ	Υ				Χ			Х		Χ	Х		Χ	Υ	Υ
010	U	Χ		Υ					Ν									Х				N	Ν
011	PSS1C	Χ		Υ			Χ	Χ	Υ					Χ		b		Х	Х			Υ	Υ
012	U	Χ		Υ					Ν									Х				N	Ν
013	U			N					Ν													N	Ν
014	U			N					N													N	Ν
016	PSS1/EM1B	Χ		Υ			Χ	Χ	Υ							b	Χ	Х			Χ	Υ	Υ
021	U	Χ	Χ	Υ					Ν								Χ			Х	Х	Υ	Ν
022	U	Χ	Χ	Υ					Ν												Х	N	Ν
023	U			N					Ν													N	Ν
031	PSS1/EM1C	Χ	Χ	Υ	Х		Χ		Υ	Х	Χ	Χ			Х	Х	Χ			Х	Χ	Υ	Υ
032	PSS1/EM1B	Χ		Υ			Χ	Χ	Υ							b		Χ	Х			Υ	Υ
035	PFO1/4B	Χ	Χ	Υ		Χ	Χ	Χ	Υ						Х	b		Х	Х	Х		Υ	Υ
037	U			N					Ν													N	Ν
038	PFO4/1B	Χ	Χ	Υ		Χ	Χ	Χ	Υ	Χ	Χ	Χ				Х		Χ	Χ	Х	Χ	Υ	Υ
039	PEM1F	Χ	Χ	Υ		Χ	Χ	Χ	Υ	Χ	Χ	Χ			Χ	Х	Χ	Χ	Χ	Х	Χ	Υ	Υ
040	U	Χ		Υ					N													N	Ν
•	TOTAL	18	9	18	1	4	10	9	11	4	4	4	1	1	4	5	6	12	7	8	9	12	11

 ^a NWI: National Wetlands Inventory, Cowardin et al. 1979. See Table 3 for full descriptions.
 ^b Hydrogen sulfide odor detected deeper than 12 inches below the soil surface (beginning at any organic soil layer); site meets the requirement of the hydrogen sulfide odor hydric soil indicator but not the hydrogen sulfide odor primary hydrology indicator.



Appendix A: Plant List

Species	Common Name	Indicator Status ^a
Achillea millefolium	Common yarrow	FACU
Actaea rubra	Red baneberry	FACU
Agrostis exarata (Agrositis alaskensis)	Spiked bent	FACW
Alnus viridis (Alnus sinuata)	Sitka alder	FAC
Angelica genuflexa	Kneeling angelica	FACW
Anthoxanthum hirtum	Northern sweet vernal grass	FACW
Anthoxanthum nitens (Hierochloe odorata)	Sweetgrass	NL
Arnica chamissonis	Leafy leopardbane	FACW
Athyrium cyclosorum (Athyrium felix-femina)	Western lady fern	FAC
Betula kenaica	Kenai birch	FACU
Boschniakia rossica	Northern groundcone	FACU
Calamagrostis canadensis	Bluejoint	FAC
Cardamine umbellata	Umbell's bittercress	FACW
Carex anthoxanthea	Grassy-slope Arctic sedge	FACW
Carex brunnescens	Brownish sedge	FAC
Carex canescens	Hoary sedge	FACW
Carex disperma	Soft-leaf sedge	FACW
Carex limosa	Mud sedge	OBL
Carex lyngbyei	Lyngbye's sedge	OBL
Carex macrochaeta	Alaska long-awn sedge	FACW
Carex pauciflora	Few-flower sedge	OBL
Carex tenuiflora	Sparse-flower sedge	OBL
Castilleja unalaschcensis	Alaska Indian-paintbrush	FAC
Chamaenerion angustifolim	Narrow-leaf fireweed	FACW
Circaea alpina	Small enchanter's-nightshade	FACW
Comarum plaustre	Purple marshlocks	OBL
Deschampsia cespitosa ssp. beringensis	Bering's tufted hairgrass	FAC
Drosera rotundifolia	Round-leaf sundew	OBL
Dryopteris expansa	Spreading wood fern	FACU
Eleocharis palustris	Common spike-rush	OBL
Elymus trachycaulus	Slender wild rye	FACU
Empetrum nigrum	Black crowberry	FAC
Epilobium ciliatum	Fringed willow herb	FAC
Epilobium palustre	Marsh willow herb	OBL
Equisetum arvense	Field horsetail	FAC
Erigeron peregrinus	Subalpine fleabane	FACW
Festuca altaica	Rough fescue	FAC
Festuca rubra	Red fescue	FAC
Galium boreale	Northern bedstraw	FACU
Galium trifidum	Three-petal bedstraw	FACW
Galium triflorum	Fragrant bedstraw	FAC
Geranium erianthum	Woolly crane's-bill	FACU



Appendix A: Plant List

Species	Common Name	Indicator Status ^a
Geum macrophyllum	Large-leaf avens	FAC
Heracleum maximum	American cow-parsnip	FACU
Hodreum brachyantherum	Meadow barley	FACW
Iris setosa	Beach-head iris	FAC
Juncus alpinoarticulatus	Northern green rush	OBL
Juncus filiformis	Thread rush	FACW
Lathyrus palustris	Marsh vetchling	OBL
Leymus mollis	American lyme grass	FAC
Lupinus nootkatensis	Nootka lupine	FACU
Luzula multiflora	Common wood-rush	FACU
Moehringia lateriflora	Blunt-leaf grove-sandwort	FACU
Moneses uniflora	Single-delight	FACU
Myrica gale	Sweetgale	OBL
Neottia cordata (Listera cordata)	Heart-leaf twayblade	FACU
Oplopanax horridus	Devil's-club	FACU
Orthilia secunda	Sidebells	FACU
Parnassia palustris	Marsh grass-of-Parnassus	FACW
Picea glauca	White spruce	FACU
Picea sitchensis	Sitka spruce	FACU
Piperia dilatata (Platanthera dilatata)	Scentbottle	FACW
Poa arctica	Arctic blue grass	FAC
Poa palustris	Fowl blue grass	FAC
Poa pratensis ssp. alpigena	Kentucky blue grass	FACU
Poa sp.	Unidentified blue grass	-
Polemonium acutiflorum	Tall Jacob's-ladder	FAC
Populus balsamifera	Balsam poplar	FACU
Potamogeton sp.	Unidentified pondweed	-
Prenanthes alata	Western rattlesnakeroot	NL
Pyrola asarifolia	Pink wintergreen	FACU
Pyrola minor	Snowline wintergreen	FAC
Ranunculus uncinatus	Woodland buttercup	FAC
Rhinanthus minor	Little yellow-rattle	FACU
Rhododendron tomentosum	Marsh Labrador-tea	FACW
Rorippa palustris (Rorippa islandica)	Bog yellowcress	FAC
Rosa nutkana	Nootka rose	FACU
Rubus chamaemorus	Cloudberry	FACW
Rubus spectabilis	Salmon raspberry	FACU
Rumex occidentalis	Western dock	OBL
Salix barclayi	Barclay's willow	FAC
Salix fuscescens	Alaska bog willow	FACW
Salix pulchra	Diamond-leaf willow	FACW
Salix richardsonii	Richardson's willow	FACW



Appendix A: Plant List

Species	Common Name	Indicator Status ^a
Salix sitchensis	Sitka willow	FAC
Sambucus racemosa	Red elder	FACU
Sanguisorba canadensis	Canadian burnet	FACW
Senicio triangularis	Arrow-leaf ragwort	FACW
Solidago lepida	Western Canada goldenrod	FACU
Sorbus sitchensis	Sitka mountain-ash	FACU
Sparganium natans (Sparganium minimum)	Arctic burr-reed	OBL
Spinulum annotinum (Lycopodium annotinum)	Interrupted club-moss	FACU
Spiraea stevenii	Steven's meadowsweet	FACU
Stellaria borealis ssp. sitchana	Sitka starwort	FACW
Swertia perennis	Felwort	FACW
Symphyotrichum subspicatum (Aster subspicatum)	Leafy-bract American-aster	FAC
Taraxacum officinale	Common dandelion	FACU
Thalictrum sparsiflorum	Few-flower meadow-rue	FACU
Trichophorum alpinum	Alpine leafless-bulrush	OBL
Trientalis europaea	Arctic starflower	FACU
Triglochin palustris	Marsh arrow-grass	OBL
Trisetum cernuum	Tall false oat	FACU
Vaccinium oxycoccus	Small cranberry	OBL
Vaccinium vitis-idaea	Northern mountain-cranberry	FAC
Veratrum viride	American false hellebore	FAC
Viburnum edule	Squashberry	FACU
Viola glabella	Pioneer violet	FACW
Viola langsdorfii	Aleutian violet	FACW
Viola palustris (Viola epipsila)	Alpine-marsh violet	FACW

^a Wetland Indicator Status (Lichvar et al. 2016). FAC (Facultative): species equally likely to occur in wetlands and non-wetlands; FACU (Facultative Upland): species usually occurs in non-wetlands; FACW (Facultative Wetland): species usually occurs in wetlands; OBL (Obligate): species almost always occurs under natural conditions in wetlands; NL: not listed.

WETLAND DETERMINAT	TION DATA FORM – Alaska Region
Project: Part Lines Argant Boroug	phicity: Kodiak Taland Burough Date: 7/19/18
Applicant/Owner: DOTOPF Southcoast Region	Sampling Point #:
Investigator(s): M5, EH, MD	Firm: HDR Alaska, Inc.
Lat. (dec.") 57.885502 Long	NAD 83 Recorded on GPS #: 📈 Marked on map? 🗶 Field Map #: 5
Subregion (circle one): SE Southcentral Western Aleutian Interior	ior Northern Landform: Pat Slope (%): Aspect:
Local relief: Shape across slope: finear convex / concave Shape u	p/downslope: Alfread convex / concave NWI classification:
Photo nos./descriptions: Par - Penny	Camera #: Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of ye	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ significantly disturbed	ed? Are "Normal Circumstances" present? Yes X No
Are Vegetation $ ot \sim$, Soil $ ot \sim$, or Hydrology $ ot \sim$ naturally problemation	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes _X No	Is the sampled area
Hydric Soil Present? Yes No _X	within a wetland? Yes No X
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (no	ot relative cover). % can total >100%. Use 2012 indicator status.
The second secon	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Co	ov.% Dom? Ind. Number of Dominant Species
1 5	That are ORL EACIN as EAC:
2 6	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: 100 (A/B)
50% of total cover: 20% of total cov	ver: Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.C	I LIBI STOCIOS
1.5 L bar 70 X FAC 7.	— — FACW species 17 x2= 34
2. Sal pul 5 FACW 8. FACW 9.	
3. 5c rich 5 rikh 9.	16
5	UPL + NL species X5=
612	Column Totals: 167 (A) 487 (B)
Total Sapling/Shrub Cover: 40	Soldin Foldist Total (1)
50% of total cover: 40 20% of total co	ver: 16 Prevalence Index = B/A = 3.01
Herb Stratum	Ver. 10 Prevalence index = 0/A =
Abs.Cov.% Dom? Ind. Abs. C	cov.% Dom? Ind.
1. Col can 55 X FAC 12.	Hydrophytic Vegetation Indicators:
2. Cha any 8 FAW 13.	X Dominance Test is>50%
3. Ang gen 5 FACW 14.	Prevalence Index is ≤3.0
4. Ard mill 5 FACU 15. 5. Sol led 2 PACU 16.	4
6. San can 2 FACW 17.	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7. Gel triflorum 1 PHC 18.	Problematic Hydrophytic Vegetation (Explain)
8. Fan arv 1 PAC 19	Problematic hydrophytic vegetation (Explain)
9. Tr: enr 3 FACU 20.	
10 21	1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11	at present amos distarbed of problemate.
Total Herb Cover: 82	. 1 1
50% of total cover: 20% of total co	Vegetation Yes V No
	bare ground: Present?
% Cover of Wetland Bryophytes% Total Cover of Br (where applicable)	yophytes <u>(O</u> %
Remarks: Vibedu, ros noo, rub spe, fes rub, des	
Ran unc, Gen mac, ste sit, Ath Fel, Cir	alp , Vio epi
US Army Corps of Engineers	Alaska Version 2.0 Modified by HDR
County Corps of Engineers	Deare Velaion 2.0 Intellieu by ADN

	escribe to the dep	un needed	to document the i			ule abse	nce or muce			
Depth Horizon	Soil Matrix	_ 1	Re	dox Feat		-		a,a dip. (pos/	Remarks	
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	<u>Loc²</u>	_Texture	nea)	(or use comment n	
-6 Oi -										
Ash 1	O18611			_			Fal			
· · ·	-1.5	1_		_			-			_
-11 B/C 1	OYR 5/6			_	_	_	FSG	-		
1-15 B/L T	10925/2			_		_	Fon	_		_
-15 B/C 1	VIES/ C				—	_	1,,,,,	_		
5-20 Oab -	7,5/8 2.5/2									
ype: C = Concentration		RM = Red	uced Matrix, CS=	Coated 5	Sand Grain	s ² Locatio	on: PL = Po	re Lining, RC	= Root Channel, M	= Matı
ydric Soil Indicators										
landard Indicators:			Indicators fo				3 ³ :			
$\overline{\mathcal{V}}$ Histosol or Histel (A/ Alaska	Color Cl	hange ⁴ (TA	(4)			of hydrophytic vege dicator of wetland	etation,
sat'd during wet (period of growing sec						1	nydrology, and	d an appropriate land	
underlain by min	eral soil with chroma	. satu, 1≤2)	N Alaska	Alpine S	Swales (TA	5)		position must lor problematic	be present uniess d	isturbe
Hydrogen Sulfide (ground	 ✓ Alaska	Redox v	with 2.5Y H	ue			of color change in Re	emarks
Thick Dark Surface			<u> </u>	Gleyed erlying L		e 5Y or R	ledder			
N Alaska Gleyed (A1	13)		- Other (
V Alaska Redox (A1					xplain in Re					
Alaska Gleyed Po					,					
testrictive Layer (if pres			Drainage Cla	BSS: 4	Nd _					U
M A.			Soil Map Un	il Nomo:		Ш	ALL CAUD	47	Yes No	X
Type: 10n			John Map Off	it ivanie.		ניין ו	dric Soll P	resentr	165 110	
Depth (inches)		d unso						resentr	163 NO	
Depth (inches) Comments: . 9 of Ash	war burie	d ungo						resent?	X 100	
Depth (inches) comments: Ash COROLOGY	war burie		ndie. Well	drain	-darh	layer	1	l ^	at 2 are required)	
Depth (inches) Comments: Property Ash Comments: Property Ash Comments: Property Ash Comments: Co	war burie	nes that ap	ndie. Well	drain	-darh	lay w	sondary India	l ^	st 2 are required)	
Depth (inches) Comments: Primary Indicators (ar	war burie dicators (check on one indicator is	nes that apsufficient)	oply, measure fro	an soll s	adarh surface):	Sec AL	ondary India Water-Stain Drainage P	cators (at leas ned Leaves (B latterns (B10)	at 2 are required)	
Depth (inches) Comments: 9	dicators (check only one indicator is	nes that apsufficient)	oply, measure fro	an soll s	adarh surface):	Sec AL AL	ondary India Water-Stair Drainage P Oxid'd Rhiz	cators (at leas ned Leaves (B latterns (B10) cospheres on	at 2 are required) 39) Living Roots (C3) (v	
Depth (inches) comments: 9	dicators (check on one indicator is) (A2) (w/in 12")	nes that apsufficient) A/ Surf	oply, measure fro	m soil s	avach surface):	Sec Au Au	ondary India Water-Stain Drainage P Oxid'd Rhiz Presence o	cators (at leas ned Leaves (B atterns (B10) cospheres on of Reduced Iro	at 2 are required) 39) Living Roots (C3) (v	
Depth (inches) Comments: Primary Indicators (ar W Surface Water (A1) High Water Table (W Saturation (A3) (W)	dicators (check on one indicator is) (A2) (w/in 12")	nes that apsufficient)	pply, measure fro face Soil Cracks (Indation Visible on rsely Vegetated Co	m soil s B6) Aerial Im	surface): nagery (B7 Surface (B	Sec AL AL 8) AL	condary India Water-Stain Drainage P Oxid'd Rhiz Presence c (pos. a,a Salt Depos	cators (at leas ned Leaves (B latterns (B10) cospheres on of Reduced Ind or soil color of its (C5)	at 2 are required) 39) Living Roots (C3) (von (C4) (change w/in 12")	
Depth (inches) Comments: 9	dicators (check on one indicator is) (A2) (w/in 12") in 12")	nes that apsufficient) Surf Inun Spai Mari Hydi	pply, measure from face Soil Cracks (Indation Visible on reely Vegetated Coll Deposits (B15) rogen Sulfide Odd	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL AL AL AL AL AL AL AL AL AL AL AL	ondary India Water-Stair Drainage P Oxid'd Rhiz Presence c (pos. a,a Salt Depos Stunted or	cators (at leas ned Leaves (B latterns (B10) cospheres on of Reduced Iro or soil color of its (C5) Stressed Plan	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12")	
Depth (inches) Comments: 9	dicators (check on one indicator is) (A2) (w/in 12") in 12")	nes that apsufficient) Surf Inun Spai Mari Hydi	pply, measure fro face Soil Cracks (Indation Visible on rsely Vegetated Co	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL AL (N) (N)	ondary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi	cators (at leas ned Leaves (B latterns (B10) cospheres on of Reduced Indian or soil color of its (C5) Stressed Plar ic Position (D2	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12")	
Depth (inches) Comments: i. 9	dicators (check on one indicator is) (A2) (w/in 12") in 12")	nes that apsufficient) A/ Surf A/ Inum M/ Spa A/ Man A/ Hyd M/ Dry-	pply, measure from face Soil Cracks (Indation Visible on reely Vegetated Coll Deposits (B15) rogen Sulfide Odd	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL AL (N) (N)	ondary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a.a. Salt Depos Stunted or Geomorphi Shallow Ac	cators (at leas ned Leaves (B latterns (B10) cospheres on of Reduced Indoor soil color of its (C5) Stressed Plan ic Position (D3)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1)	
Depth (inches) Comments: Primary Indicators (ar W Surface Water (A1) High Water Table (W Saturation (A3) (w/ Water Marks (B1) Sediment Deposits A Drift Deposits (B3)	dicators (check on one indicator is) (A2) (w/in 12") in 12") . (B2)	nes that apsufficient) A/ Surf A/ Inum M/ Spa A/ Man A/ Hyd M/ Dry-	pply, measure fro face Soil Cracks (I dation Visible on rsely Vegetated Of Deposits (B15) rogen Sulfide Odd Season Water Ta	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL AL B) AL AL AL AL AL AL AL AL AL AL AL AL AL A	condary India Water-Stain Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, α	cators (at lease ned Leaves (B10) cospheres on of Reduced Iron or soil color of color (C5) Stressed Plartic Position (D3) can perch H20	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1)	vithin 12
Depth (inches) Comments: Off of Ash Comments: Off of Ash Comments: Off of Ash Comments: Off of Ash Comment Indicators (arh Off Off Off Off Off Off Off Off Off Of	dicators (check on one indicator is) (A2) (w/in 12") in 12") . (B2)	nes that apsufficient) A/ Surf A/ Inum M/ Spa A/ Man A/ Hyd M/ Dry-	pply, measure fro face Soil Cracks (I dation Visible on rsely Vegetated Of Deposits (B15) rogen Sulfide Odd Season Water Ta	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL 8) AL N	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1) 2) O w/in 12") (D4) (caused by water)	vithin 12
Depth (inches) Comments: Off of Ash Comment Indicators (arh Comments (dicators (check on one indicator is) (A2) (w/in 12") in 12") . (B2)	nes that apsufficient) A Surf Inun Spai Mari A Hyd Dry-	pply, measure fro face Soil Cracks (I dation Visible on rsely Vegetated Of Deposits (B15) rogen Sulfide Odd Season Water Ta	m soil s B6) Aerial Im Concave	surface): nagery (B7 Surface (B	Sec AL AL 8) AL N	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (v on (C4) change w/in 12") onts (D1) 2) O w/in 12")	within 12
Depth (inches) Comments: Officery Velland Hydrology Inc. Primary Indicators (ar W Surface Water (A1) W High Water Table (W Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Inchesy In	dicators (check on yone indicator is) (A2) (w/in 12") in 12") (B2) (B4)	nes that apsufficient) A Surf Inun Spal Man M Hydi Dry Other	pply, measure from the control of th	m soil s B6) Aerial Im Concave or (C1) (vable (C2)	surface): nagery (B7 Surface (B	Sec AL AL 8) AL N	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1) 2) O w/in 12") (D4) (caused by water)	within 12
Depth (inches) Comments: Officeries As	dicators (check on one indicator is) (A2) (w/in 12") in 12") (B2) (B4) from ground surfa	nes that apsufficient) A/ Surficient A/ Surficient A/ Surficient A/ Surficient A/ Spai A/ Mari A/ Hydi A/ Dry- Other (ce):	pply, measure from face Soil Cracks (lidation Visible on reely Vegetated Of Deposits (B15) rogen Sulfide Odd Season Water Taler (explain)	m soil s B6) Aerial Im Concave or (C1) (v able (C2)	surface): magery (B7 Surface (B w/in 12") (w/in 24")	Sec AL AL 8) AL N	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1) 2) O w/in 12") (D4) (caused by water)	within 12
Depth (inches) Comments: 9	dicators (check on one indicator is) (A2) (w/in 12") in 12") . (B2) . (B4) from ground surfa ? Yes	nes that apsufficient) A Surficient A Inun N Spai A Hydi Dry Other Ice): No X	poply, measure from acce Soil Cracks (Indation Visible on presely Vegetated Coll Deposits (B15) progen Sulfide Odd Season Water Taler (explain)	m soil s B6) Aerial Im concave or (C1) (v bble (C2)	surface): nagery (B7 Surface (B	Sec AL AL 8) AL N	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ants (D1) 2) O w/in 12") (D4) (caused by water)	within 12
Depth (inches) Comments: Of Primary Indicators (ar W Surface Water (A1) W High Water Table (W Saturation (A3) (w/ W Water Marks (B1) W Sediment Deposits (B3) A Drift Deposits (B3) A ligal Mat or Crust M Iron Deposits (B5) Field Observations (in. Surface Water Present?	dicators (check on one indicator is) (A2) (w/in 12") in 12") . (B2) . (B4) from ground surfa ? Yes	nes that apsufficient) A Surficient A Inun N Spai A Hydi Dry Other Ice): No X	poply, measure from acce Soil Cracks (Indation Visible on resely Vegetated Coll Deposits (B15) rogen Sulfide Odd Season Water Taler (explain) Depth of was at depth but not yet.	m soil s B6) Aerial Im Concave or (C1) (v able (C2)	surface): nagery (B7 Surface (B	Sec AL	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a.a. Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*, Microtopog FAC Neutr (# OBL+F	cators (at lease ned Leaves (B10) cospheres on of Reduced Iro or soil color coits (C5) Stressed Planic Position (D3) can perch H20 graphic Relief at Test (D5)	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ats (D1) 2) O w/in 12") (D4) (caused by wate a > #FACU+UPL don	within 12
Depth (inches) Comments: Of Primary Indicators (ar Verland Hydrology Inc Primary Indicators (ar Verland Hydrology Inc Primary Indicators (ar Verland Hydrology Inc Verland H	dicators (check on one indicator is) (A2) (w/in 12") (B2) (B4) from ground surfa ? Yes Yes Yes Yes (B4)	nes that apsufficient) A Surficient A Inun No Spal A Hyde Dry- Other No X Ing in at the	poply, measure from acce Soil Cracks (Indation Visible on presely Vegetated Coll Deposits (B15) progen Sulfide Odd. Season Water Tater (explain) Depth of water to be action of the collection	m soil s B6) Aerial Im Concave or (C1) (c) ater (in.) ater (in.) Unkn	surface): nagery (B7 Surface (B) W/in 12") (W/in 24")	Sec AL	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*,4 MIcrotopog FAC Neutr (# OBL+F)	cators (at lease de Leaves (B10) cospheres on of Reduced Iro or soil color of its (C5) Stressed Plaric Position (D3) can perch H20 graphic Relief al Test (D5) ACW dominants	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ats (D1) 2) O w/in 12") (D4) (caused by wate a > #FACU+UPL don	vithin 12
Depth (inches) Comments: Primary Indicators (ar W Surface Water (A1) W High Water Table (Water Marks (B1) W Sediment Deposits (B3) A Algal Mat or Crust M Inches (B5) Field Observations (In. Surface Water Present? Vater Table Present?	dicators (check on one indicator is) (A2) (w/in 12") (B2) (B4) from ground surfa ? Yes Yes Yes Yes (B4)	nes that apsufficient) A Surficient A Inun No Spal A Hyde Dry- Other No X Ing in at the	poply, measure from acce Soil Cracks (Indation Visible on presely Vegetated Coll Deposits (B15) progen Sulfide Odd. Season Water Tater (explain) Depth of water to be action of the collection	m soil s B6) Aerial Im Concave or (C1) (c) ater (in.) ater (in.) Unkn	surface): nagery (B7 Surface (B) W/in 12") (W/in 24")	Sec AL	condary India Water-Stain Drainage P Oxid'd Rhiz Presence of (pos. a,a Salt Depos Stunted or Geomorphi Shallow Ac (w/in 24*,4 MIcrotopog FAC Neutr (# OBL+F)	cators (at lease de Leaves (B10) cospheres on of Reduced Iro or soil color of its (C5) Stressed Plaric Position (D3) can perch H20 graphic Relief al Test (D5) ACW dominants	at 2 are required) 39) Living Roots (C3) (von (C4) change w/in 12") ats (D1) 2) O w/in 12") (D4) (caused by wate a > #FACU+UPL don	vithin 12



Site 001: Soil. Photo taken July 19, 2018.



Site 001: Soil. Photo taken July 19, 2018.





Site 001: Northern view of vegetation. Photo taken July 19, 2018.



Site 001: Western view of vegetation. Photo taken July 19, 2018.

Applicant/Owner: DOT LIFE SC. Investigator(s): Mac Scient Methods Scientific Teams (1957) 11 Concerns Miles Investigator (s): Mac Scientific Teams (1957) 11 Concerns Miles Investigator (s): Mac Scientific Teams (1957) 12 Concerns (1957) 12	18
Lat. (dec. S. F. F. F. F. S. Long. 19.7. F. F. S. Long. 19.7. F. S. Long. 19.7. F. S. Long. 19.7. F. S. Long. 19.7. F.	5
Coal relief: Shape across slope; glagar controver / concave Shape up/downslope:	
Local relief. Shape across stope; magar controver concave Shape up/downstope: im control for the control for t	#: 5
Shape up/downslope:	
Are Vegetation Are Soil Are or Hydrology Are Significantly disturbed? Are Normal Circumstances' present? Yes X No Are Vegetation Are Soll Are or Hydrology Are Significantly disturbed? Are Normal Circumstances' present? Yes X No Are Vegetation Are Soll Are sold are within a wetland? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X No Is the sampled area within a wetland? Yes X No Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status. VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status. Tree Stratum (obb≥ 3') Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Tree Stratum (obb≥ 3') Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Total Tree Cover: Total Tree Cover: 50% of total cover: 20% of total cover: Sapiling/Shrub Stratum (woody plants < 3' dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Pet Issm. ID FMU 7. 2. Col Dom Shrub 9. 1. Total Saping/Shrub Cover: 7. Total Saping	1
Are Vegetation A, Soil A, or Hydrology A significantly disturbed? Are Woestation A, Soil A, or Hydrology A significantly disturbed? Are Woestation A, Soil A, or Hydrology A naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X, No	TS
Are "Normal Circumstances" present? Yes X No Are Vegetation Av Soil X or Hydrology M naturally problematic? SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X No Is the sampled area within a wetland? Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status. Trea Stratum (dbh2 3') Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Total Number of Dominant Species That are OBL, FACW, or FAC: Total Tree Cover: Total Number of Dominant Species That are OBL, FACW, or FAC: Prevalence Index worksheet: Total Species Across All Strata: Total Tree Cover: Total Number of Dominant Species That are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiph Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species 3 % X1= 35 FAC Species 2 X2= 44 FAC Species 10 X4= 4C UPL+NL species 10 X4= 4C Column Totals: 14'3 (A) 361 Hydrophytic Vegetation Indicators: Total Sapling/Shrub Cover: Total Sapli	: 5/6pe
Summary of Findings Yes No Is the sampled area within a wetland? Yes No No No No No No No N	
Hydrophytic Vegetation Present? Yes X No Is the sampled area within a wetland? Yes X No Remarks (e.g., marginal?):	
Hydric Soil Present? Yes	
Wetland Hydrology Present? Yes X No	
Vestard Hydrology Present? Yes No Remarks (e.g., marginal?):	
Tree Stratum (dbh2 37) Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Species Across All Strata: Specie	
Tree Stratum (dbh2 37) Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: Total Species Across All Strata: Specie	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	
1.	
2.	(A)
Species Across All Strata: Species Across All Across Across All Strata: Species Across All Across Across All Across Across All Across Across All Across A	
That are OBL, FACW, or FAC: Prevalence index worksheet: Sapling/Shrub Stratum (woody plants < 3° dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species 3 8 X1 = 35	(B)
That are OBL, FACW, or FAC: Prevalence index worksheet: Sapling/Shrub Stratum (woody plants < 3° dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species 3 8 X1 = 35	200
50% of total cover:	(A/B)
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species 38	(700)
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species 38 X1= 39 FACW species 2 X2= 4 FAC species 93 X3= 27 FACU species 10 X4= 40 UPL + NL species 10 X4= 40 UPL + NL species 2 X5= — Column Totals: 143 (A) 361 Total Sapting/Shrub Cover: 77 50% of total cover: 38.5 20% of total cover: 15.4 Prevalence Index = B/A = 2.52 Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0	/ hv
2. Gel bac 65 X FHC 8. 3. 5al pal 2 FACW 9. 4	
3. 51 pn 2	=
10.	79
5	
6	
Total Sapling/Shrub Cover:	
50% of total cover: 38.5 20% of total cover: 15.4 Prevalence Index = B/A = 2.5 2 Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Cor Inn 35 × col. 12. 2. Col. con 15 × file 13. 3. Das + 6€0 3 PAC 14. 4. Fare or 10 FAC 15. 5. Com 40 3 Col. 16	(B)
Herb Stratum	
Abs.Cov.% Dom? Ind. 1. Cor Ign 35 X OOL 12. 2. Cor Ign 15 X File 13. 3. Dos + 6€0 3 4. Fig rv 10 FAC 15. 5. Com 10 3 COL 16	
1. Cer 19n 35 X 600 12. Hydrophytic Vegetation Indicators: 2. Cel Cen 15 X FHE 13. Hydrophytic Vegetation Indicators: 3. Des 11 600 3 Dominance Test is>50% Prevalence Index is ≤3.0	
3 Des ++ 6€0 3 18C 14. 4 Ferry 10 PMC 15. Dominance Test is>50% Prevalence Index is ≤3.0	
4 Fe - rv 10 Prevalence Index is ≤3.0 5 Com 10 3 COL 16	
5. Cam 40 3 OOL 16	
CUL 16	
i morphological Adaptations (Provide sun	porting
5	et)
3 Problematic Hydrophytic Vegetation (Ex	plain)
20	×
10	
be present unless disturbed or problematic	HUST
Total Herb Cover: 66	
500/ 054-4-1	
20% of total cover: Yes Ye	
% Cover of Wetland Bryophyles 3 % Total Cover of Bryophyles 15 %	
Remarks:	
Tries: Knb spe, for put; San can, Car can, Ep. put, Ang gen, Sol lop, Gal trifid	1 12-16)
Army Corps of Engineers	

L										
ofile Description:	(Describe to the de	pth neede	d to document the i	ndicator	or confirm	n the ab	sence of i	ndicato	ors)	
epth Horizon	Soil Matrix		Re	dox Fea	tures				a,a dip.	Downstee
in.) (opt.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc2	Tex	ture_	(pos/ neg)	<u>Remarks</u> (or use comment number)
5 0:							_			
- 1 B/C	2.516/2	85	7.5YK4/6	15	C	PLL	c fg	_		
10 BIC	51711	25	5×R4(6	15	_	PLR	c <u>+</u> :	54		
-13 BIC	55711	90	541416	10	-	PLL	<u> Fse</u>	1		
16 BII	10486/3	14					F5a			
19 811	11444511					-	50	3_		Mulisgated
22 006	1011 / //	_					-			moist
							- 3	_		
										= Root Channel, M = Mate
ydric Soil Indicator	s (check ones that	t apply, me						noteo):	
tandard Indicators:		- 7	Indicators fo	or Probl	ematic H	ydric Sc	ils":	30	na indicata	r of hydrophytic vegetation,
	el (A1) (≥16°organic		Alaska	Color C	hange ⁴ (T	A4)				ndicator of wetland
	et period of growing a (A2) (8-16" organics			A1-1 6	Dunlan (T.	A (5)		hv	drology, an	d an appropriate landscape
underlain by m	nineral soil with chrom	a ≤2)	Alaska	Alpine	Swales (T/	A5)		po	sition must problemati	be present unless disturbe
Hydrogen Sulfid surface; @	e (A4) (within 12"of	ground	Alaska	Redox	with 2.5Y	Hue				of color change in Remarks
Thick Dark Surfa				Gleyed erlying L	without H ayer	ue 5Y o	Redder			
Alaska Gleyed ((A13)		Other	e.g., see	p.91 of 200	07				
Alaska Redox (A			Supp	lement; e	xplain in Re	emarks)				
Alaska Gleyed F										
			D-1 01	_	// 11					
	resent)		Drainage Cla	ass:	SWPD					
estrictive Layer (if p			Soil Map Un				Hydric S	oil Pre	sent?	Yes X No
estrictive Layer (if p	resent)						Hydric S	oil Pre	sent?	Yes No No
estrictive Layer (if p Type:	10 10	ages that	Soil Map Un	it Name						
estrictive Layer (if property of property	Indicators (check		Soil Map Un	it Name			Secondary	Indica	itors (at lea	st 2 are required)
estrictive Layer (if post post post post post post post post	Indicators (check	s sufficien	Soil Map Un	it Name			Secondary Water	/ Indica	itors (at lea	st 2 are required) B9)
estrictive Layer (if property of property	Indicators (check (any one indicator in A1)	s sufficien <u>A∠</u> Su	apply, measure fro	om soil s	surface):		Secondar Water	/ Indica -Staine	itors (at lea ed Leaves (tterns (B10	st 2 are required) B9)
estrictive Layer (if p Type:	Indicators (check (any one indicator in A1) e (A2) (w/in 12")	s sufficien A∠ Su A∠ Ind	apply, measure fro	om soil s B6) Aerial in	surface):	§	Secondan Water >> Drain:	r Indica -Staine age Pa I Rhizo nce of	itors (at lea ed Leaves (tterns (B10 spheres or Reduced in	st 2 are required) B9)) s Living Roots (C3) (within 13 on (C4)
estrictive Layer (if property of the control of the	Indicators (check (any one indicator in A1) e (A2) (w/in 12") w/in 12")	s sufficien A∠ Su A∠ Ini A∠ Sp	apply, measure from the state of the state o	om soil s B6) Aerial in	surface):	§	Gecondan Water Draini X Oxid'o	r Indica -Staine age Pa I Rhizo nce of	tors (at lea ed Leaves (tterns (B10 spheres or Reduced fr r soil color	st 2 are required) B9) Living Roots (C3) (within 13)
Depth (Inches) Depth (Inches)	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12")	s sufficien AL Su AL In AL Sp AL M	apply, measure fro	om soil s B6) Aerial In Concave	surface): nagery (B Surface (§	Gecondan Water Drain: X Oxid'd Prese (pos	r Indica -Staine age Pa I Rhizo nce of . a,a o	tors (at leased Leaves (B10 spheres or Reduced in r soil color s (C5)	st 2 are required) B9)) s Living Roots (C3) (within 12 on (C4) change w/in 12")
estrictive Layer (if p Type:	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") I) sits (B2)	s sufficient A Su A In A Su A Su A Su A Market A Hy	apply, measure from the state of the state o	om soil s B6) Aerial In Concave	surface): nagery (B Surface (S	Secondan Water Draini Oxid'o Prese (pos Salt C	r Indica -Staine age Pa I Rhizo nce of . a,a o deposits	ed Leaves (B10 spheres or Reduced ir r soil color s (C5) tressed Pla	st 2 are required) B9)) 1 Living Roots (C3) (within 12 on (C4) change w/in 12")
Depth (Inches) Depth (Inches)	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") I) sits (B2)	s sufficient A Su A In A Su A Su A Su A Market A Hy	apply, measure fro	om soil s B6) Aerial In Concave	surface): nagery (B Surface (S	Secondan Water Draini Oxid'o Prese (pos Salt D Stunt X Geom	r Indica -Staine age Pa I Rhizo nce of . a,a o deposits ed or S sorphic	ed Leaves (B10 spheres or Reduced ir r soil color s (C5) tressed Pla	st 2 are required) B9)) 1 Living Roots (C3) (within 12 on (C4) change w/in 12")
estrictive Layer (if p Type:	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") l) sits (B2)	Sufficien AL Su AL In AL Sp AL Hy AL Di	apply, measure from the state of the state o	om soil s B6) Aerial In Concave	surface): nagery (B Surface (S	Gecondan Water Drain: X Oxid'd Prese (pos Salt D Stunto X Georr Shall	r Indica -Staine age Pa I Rhizo nce of . a,a o eposite ed or S norphic	ttors (at leased Leaves (B10 spheres or Reduced Ir r soil color s (C5) tressed Plate Position (Dittard (D3)	st 2 are required) B9)) s Living Roots (C3) (within 12 on (C4) change w/in 12") ints (D1)
Depth (inches) Depth (inches)	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") iits (B2) 3) st (B4)	Sufficien AL Su AL In AL Sp AL Hy AL Di	apply, measure fro	om soil s B6) Aerial In Concave	surface): nagery (B Surface (S	Gecondan Water Drains Oxid'o Prese (pos Salt D Stunto X Georr Shalk (w/in	r Indica -Staine age Pa I Rhizo nce of . a,a o eposite ed or S aorphic ow Aqu 24", ca	itors (at leased Leaves (at leaves (at leaves (at leaves or Reduced for soil color s (C5) tressed Plates (C5) tressed Plates (D3) an perch H2	st 2 are required) B9)) 1 Living Roots (C3) (within 12 on (C4) change w/in 12")
estrictive Layer (if p Type: Depth (inches) Comments: D/C is Ask CDROLOGY Vetland Hydrology Primary Indicators My Surface Water (A Saturation (A3) (Water Marks (B1 Sediment Deposits (B	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") iits (B2) 3) st (B4)	Sufficien AL Su AL In AL Sp AL Hy AL Di	apply, measure fro	om soil s B6) Aerial In Concave	surface): nagery (B Surface (Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georn Shalk (w/in Micro X FAC	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic ow Aqu 24", ca topogra	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
estrictive Layer (if p Type: Depth (inches) Comments: D/C is Ask OBROLOGY Vetland Hydrology Primary Indicators V Surface Water (A W High Water Table Saturation (A3) (W Water Marks (B1 W Sediment Deposits (B1 Algal Mat or Cru V Iron Deposits (B	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") l) sits (B2) (3) st (B4)	s sufficien A St A In A In	apply, measure fro	om soil s B6) Aerial In Concave	surface): nagery (B Surface (Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georn Shalk (w/in Micro X FAC	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic ow Aqu 24", ca topogra	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
rype:	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") (i) sits (B2) (ii) st (B4) 5) in. from ground surf	s sufficien A St A In A In	apply, measure from the state of the state o	om soil s B6) Aerial In Concave or (C1) (able (C2)	surface): nagery (B' Surface (w/in 12")) (w/in 24"	S	Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georn Shalk (w/in Micro X FAC	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic ow Aqu 24", ca topogra	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
estrictive Layer (if p Type: Depth (inches) Comments: D/C is Ask Comment Deposits (Base) D/C Sediment Deposits (Base) D/C Sediment Deposits (Base) D/C Iron Deposits (Base) Comments: D/C is Ask D/	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") its (B2) (3) st (B4) 5) in. from ground surfactor? Yes	s sufficien A Su A Ini A Su A Ini A Su A Hy A Du Co face):	Soil Map Un apply, measure fro i) urface Soil Cracks (undation Visible on parsely Vegetated (arl Deposits (B15) ydrogen Sulfide Od ry-Season Water Ta ther (explain)	om soil s B6) Aerial In Concave or (C1) (able (C2)	surface): nagery (B' Surface (w/in 12")	S	Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georn Shalk (w/in Micro X FAC	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic ow Aqu 24", ca topogra	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
rype:	Indicators (check (any one indicator in indi	s sufficien A Su A Ind A	apply, measure from the state of the state o	m soil s B6) Aerial In Concave or (C1) (able (C2) ater (in.)	surface): nagery (B Surface (i w/in 12")) (w/in 24"	S	Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georn Shalk (w/in Micro X FAC	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic ow Aqu 24", ca topogra	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
Depth (inches) Depth	Indicators (check (any one indicator in A1) e (A2) (w/in 12") l) sits (B2) st (B4) 5) in. from ground surfactor? Yes See	s sufficien A Su A Ind A Ind A Su A Ind A Ind A Su A Ind	apply, measure from the state of the state o	B6) Aerial In Concave or (C1) (able (C2) ater (in.)	surface): nagery (B Surface (i w/in 12")) (w/in 24"	7) B8)	Secondan Water Drains Oxid's Prese (pos Salt C Stunt X Georr Shalk (win Micro X FAC (# C	r Indica -Staine age Pa I Rhizo nce of . a,a o eposite ed or S sorphic bw Aqu 24*, ca topogra Neutral BL+FA	tors (at leased Leaves (B10 spheres or Reduced for soil colors (C5) tressed Platerd (D3) an perch H2 aphic Relie Test (D5) CW dominant	st 2 are required) B9))
estrictive Layer (if p Type: Depth (inches) Comments: D/C is Ask Comment Deposits (B) D/C Algal Mat or Cru D/C Iron Deposits (B) D/C Iron	Indicators (check (any one indicator in A1) e (A2) (w/in 12") w/in 12") l) sits (B2) ist (B4) 5) in. from ground surfactor in Yes Yes Yes Yes	s sufficien A St A In A In	apply, measure from the state of the state o	m soil set to the set of the set	surface): nagery (B Surface (i w/in 12")) (w/in 24"	7) B8)	Secondan Water Drains Oxid's Prese (pos Salt C Stunt X Georr Shalk (win Micro X FAC (# C	r Indica -Staine age Pa I Rhizo nce of . a,a o eposite ed or S sorphic bw Aqu 24*, ca topogra Neutral BL+FA	tors (at leased Leaves (at leaves (blue spheres or Reduced for soil color s (C5) tressed Platers (D3) an perch H2 aphic Relie Test (D5)	st 2 are required) B9))
estrictive Layer (if p Type:	Indicators (check (any one indicator in A1) e (A2) (w/in 12") l) sits (B2) 3) st (B4) 5) in. from ground surfactor? Yes ent? Yes Yes inge)	s sufficien A St A In A In	apply, measure from the state of the state o	ater (in.) ater (in.) ater (in.) ater (in.) ater (in.)	surface): nagery (B Surface (i w/in 12")) (w/in 24"	S	Gecondan Water Drains Oxid'd Prese (pos Salt D Stunto X Georr Shall (w/in Micro X FAC (# C	r Indica -Staine age Pa I Rhizo nce of . a,a o eposits ed or S norphic bw Aqu 24", ca topogra Neutral BL+FAG	tors (at leased Leaves (B10 spheres or Reduced for soil colors (C5) tressed Platerd (D3) an perch H2 aphic Relie Test (D5) CW dominant	st 2 are required) B9))
estrictive Layer (if p Type:	Indicators (check (any one indicator in A1) e (A2) (w/in 12") (w/in 12") (i) sits (B2) (ii) st (B4) 5) in. from ground surfact ent? Yes Yes Yes Inge) Data (stream gauge	s sufficien A Su A In A In	apply, measure from the second	ater (in.) ater (in.) contact filled? at. (in.) by Unkros, previous	surface): nagery (B Surface (w/in 12")) (w/in 24"	7)	Secondan Water Draina Oxid'o Prese (pos Salt D Stunto X Georn Shalk (w/in Micro FAC (# C	r Indica -Staine age Pa I Rhizo nce of . a,a o eposit: ed or S sorphic by Aqu 24", ca topogra Neutral BL+FA Hydrol e:	otors (at leased Leaves (at leaves (blooms) (blooms) (color solid color solid color solid (color solid color s	st 2 are required) B9))





Site 003: Soil. Photo taken July 19, 2018.



Site 003: Soil. Photo taken July 19, 2018.





Site 003: Northern view of vegetation. Photo taken July 19, 2018.



Site 003: Eastern view of vegetation. Photo taken July 19, 2018.

Project: Part / sons this fort Borough/City: X 1	B Date: 7/19/18
Applicant/Owner: Dot 1 PF Southcoast Regim	Sampling Point #: 4
15 1/2 51	HDR Alaska, Inc.
	on GPS #: _X_ Marked on map? _X_ Field Map #:
Subregion (circle one): SE Spothceptral Western Aleutian Interior Northern Landfu	norm: Flat Sinne (%): — Aspect:
Local relief: Shape across slope linear/ convex / concave Shape up/downslope: linear/	convex / concave NMI classification: PF04B
Photo nos./descriptions: ilad pewn Camera #:	Veg Type (Viereck Level 4 or other): 055 F
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	If no, explain. HGM type: Slow
Are Vegetation 1/2, Soil 1/2, or Hydrology 1/2 significantly disturbed? Are "Normal Circ	umstances" present? Yes X No
Are Vegetation $ ot \underline{\mathcal{N}} $, Soil $ ot \underline{\mathcal{N}} $, or Hydrology $ ot \underline{\mathcal{N}} $ naturally problematic? If needed, explain	
SUMMARY OF FINDINGS	Open Sitter Spars &
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes X No Is the sampled an 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:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Pic 11 35 X FACU 5.	That are OBL, FACW, or FAC:
2 6	Total Number of Dominant
3	Species Across All Strata: (B)
4	
Total Tree Cover: 35	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 17.5 20% of total cover: 7	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. All rin 5 X FAC 7.	FACW species X2=
2. <u>Sel bar</u> <u>2</u> <u>x</u> <u>FAC</u> 8	FAC species
	05
5 11.	
6	
Total Sapling/Shrub Cover:	Column Totals:(A)
50% of total cover: 4 20% of total cover:	Prevalence Index = R/A = 3.32
Herb Stratum	Prevalence Index = B/A = 7.7 2
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Cor 17h 1 OBL 12	Hydrophytic Vegetation Indicators:
2. Cha Gan Z FALU 13	
3. France 65 x PHC 14.	Dominance Test is>50% Prevalence Index is ≤3.0
4	- Totalence moex is 35.0
6	Morphological Adaptations¹ (Provide supporting
7	data in Remarks or on a separate sheet)
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9	
10	1 Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 68	
50% of total cover:	Hydrophytic
Circular 1/10-ac plot	Vegetation Yes No No
% Cover of Wetland Bryophyles 35, % Total Cover of Bryophyles 97 % (where applicable) Sphase w	THE REPORT OF THE PARTY OF THE
Remarks: - Dis class Distance - Six Additional - Six Class Distance - Si	tu ch ch di
Remarks: Torre: Piz glan, Rub spec, Spi ste, Myr gal, Sal to	TOT TOT SAT DAT Vac vity Emphis
Des git, Car lim, Har alai, Son can, Pyr asa, Orth see	(1 Bos ross , Cir alp, Trient, Dro rot
S Army Corps of Engineers	Alaska Version 2.0 Modified by HDR





Site 004: Soil. Photo taken July 19, 2018.



Site 004: Soil. Photo taken July 19, 2018.





Site 004: Northern view of vegetation. Photo taken July 19, 2018.



Site 004: Eastern view of vegetation. Photo taken July 19, 2018.

Project: Part Lions Airport Borough/City	WID 24 7/10/10
Applicant/Owner: DOT 198 SR	y:KIB
Investigator(s): MS, MD, EH	Sampling Point #: Firm: HDR Alaska, Inc.
Lat. (dec.*) 57 985956 Long152 8 79798 ± NAD	Fillif, FIDR Alaska, Inc.
Subregion (circle one): SE SouthGenfral Western Aleutian Interior No	(arthurn Landform American map? X Field Map #: 5
Local relief: Shape across slope: Inear / convex / concave Shape up/down	ordiem Landform: Slope (%): Aspect:
Photo nos./descriptions: 1/2/ = 000 nm	nsiope: Ingeat / convex / concave NWI classification: #551/EMC
Photo nos./descriptions: If a Semmy Are climatic / hydrologic conditions on the site typical for this time of year? Your Vegetation 44. Seit 44. Activities the site typical for this time of year?	_Carnera #: Veg Type (Viereck Level 4 or other): Seet
Are Vegetation 1/ Soil 1/ or Hydrology 1/ significantly distribute to	es No If no, explain HGM type: Slook
Are Vegetation 1/2, Soil 1/2, or Hydrology 1/2 significantly disturbed? A	Are "Normal Circumstances" present? Yes X No
Are Vegetation A. Soil No. or Hydrology Anaturally problematic? If SUMMARY OF FINDINGS	needed, explain answers here
Hydric Soil Present?	the sampled area
Mottand Hydrology Research	rithin a wetland? Yes X No
	Remarks (e.g., marginal?)
VEGETATION (Use scientific names.) Estimate absolute % cover (not relat	live cover). % can total >100%. Use 2012 indicator status.
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.%	Dom? Ind. Number of Dominant Species
1 5	That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata: 4 (B)
- 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: [00 (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.%	
1. Mar gal 45 × OBL 7	
3 6 cal 7 - FALU 8.	FACW species
4. Alb 47 2 FAC 10.	FAC species 12 x3= 36
5	FACU species X4= Z
6	UPL + NL species X5=
Total Santing Co. 1 a P 7	— Column Totals: 107 (A) 137 (B)
Total Sapling/Shrub Cover: 52	1011
50% of total cover: 20% of total cover: Herb Stratum	10.4 Prevalence Index = B/A = 1.34
Abs. Cov.% Ind. Abs. Cov.% [Dom? Ind.
2. Car lah 25 X OBL 13.	Hydrophytic Vegetation Indicators:
3. Cor lim 5 OBL 14	
4. Com por 10 × OBL 15.	× Prevalence Index is ≤3.0
5 16	Membelevicel Advisory Leg.
6 17	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8	Problematic Hydrophytic Vegetation¹ (Explain)
9	
11	Indicators of hydric soil and wetland hydrology must
	be present unless disturbed or problematic.
Total Herb Cover: 50	
50% of total cover: 25 20% of total cover:	
Circular 1/10-ac plot X or other plot dimension: % of bare gro	ound: 5 Vegetation Yes No No
% Cover of Wetland Bryophytes % of bare gro where applicable)	
Remarks: Trace: Pic sit (sports), Spi ste, Sal bar, Des. Any Gen, Epi pal, I oth pal, dro ret, vio epi, to	Bek.
Any her Ep par luth al los at war	The can , oun all , Angroster gly, In's set
الم ورو ا يور ميو ا يور ايد ا ا در ا در ا	i em I par pal

US Army Corps of Engineers

IL offle Description: (D epth Horizon	the standard of the								Sampling Point #:
eoth Horizon	escribe to the dep	pth neede	to document the i	ndicator	or confirm	the abser	ice of indicato	rs)	
	Soil Matrix		Re	dox Feat	ures			a,a dip	Benede
in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc2	Texture	(pos/ neg)	Remarks (or use comment number)
-16 0; _									
			- No						
-12 B/CI 7	5X6/1	90	10725/4	10	r	RCAL RLPL	155	_	
-15 0/62	IDYR612	90	104R5/4	10	<u>C</u>	RLPL	+501	+	
-22 B/L3 1	104R5/1			_			59	_	
					28				
				_	-		_	_	
			and a	_	-	-			Dest Obsessed, M. a. Mate
ype: C = Concentrati-	on, D = Depletion	, RM = Re	duced Matrix, CS=	Coated 5	Sand Grain	ns *Locatio	n: PL = Pore	Lining, RU	= Root Channel, M = Mati
dric Soil Indicators	(check ones that	apply, me	asure from top of	f minera	l layers u	nless oth	erwise noted 1):	
andard Indicators:	A. Co.		Indicators f	or Proble	ematic Hy	dric Soils	3°:	ne indicator	of hydrophytic vegetation,
Histosol or Histel	(A1) (≥16"organic period of growing se	surface,	Alaska	Color Cl	hange¹ (T	A4)	on	e primary in	dicator of wetland
Histic Epipedon (Alaska	Alnine S	Swales (TA	(5)	hy	drology, and	I an appropriate landscape be present unless disturbe
underlain by mir	neral soil with chrom	a ≤2)		rapine c	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	or	problematic	
Hydrogen Sulfide surface, @	(A4) (within 12*of	ground	Alaska	Redox v	with 2.5Y I	lue	⁴G	ive details o	f color change in Remarks
Thick Dark Surface		FA		.Gleyed lerlying L		ue 5Y or R	edder		
Alaska Gleyed (A	13)	60			p.91 of 200				
Alaska Redox (A1		-	Supp	ement; e:	xplain in Re	marks)			
Alaska Gleyed Po	ores (A15)								
estrictive Layer (if pre	sent)		Drainage CI	ass:	PD				Yes X No
Туре:	me		Soil Map Ur	nit Name:		Ну	dric Soil Pre	sent?	Yes No
BICZ'IS IOVE 67	C 7 0 1								
/DROLOGY	diantors (chack	ones that	anniv measure fro	om soil s	surface):	Sec	condary Indica	itors (at leas	st 2 are required)
Vetiand Hydrology Ir				om soil s	surface):	Sec	condary Indica		st 2 are required) 39)
Vettand Hydrology Ir Primary Indicators (a	iny one indicator i	s sufficien			surface):	<u> ×</u>	Water-Staine Drainage Pa	ed Leaves (f tterns (B10)	39)
Vettand Hydrology In Primary Indicators (a Surface Water (A1	iny one indicator i I)	s sufficien Su	<u>0</u>	(B6)		<u>*</u>	Water-Staine Drainage Pa Oxid'd Rhizo	ed Leaves (8 tterns (810) spheres on	39) Living Roots (C3) (within 1
Vetland Hydrology In Primary Indicators (a Surface Water (A1	ny one indicator i I) (A2) (w/in 12")	s sufficien Su In	<u>i)</u> Irface Soil Cracks (Indation Visible on	(B6) Aerial In	nagery (B'		Water-Staine Drainage Pa Oxid'd Rhizo Presence of	ed Leaves (b tterns (B10) espheres on Reduced In	Living Roots (C3) (within 1 on (C4)
Vettand Hydrology Ir Primary Indicators (a Surface Water (A1 High Water Table	ny one indicator i) (A2) (w/in 12") #in 12")	s sufficien Su In	t) Inface Soil Cracks (Undation Visible on Parsely Vegetated ((B6) Aerial In	nagery (B'		Water-Staine Drainage Pa Oxid'd Rhizo Presence of	ed Leaves (I tterns (B10) espheres on Reduced In r soil color (39) Living Roots (C3) (within 1
Vetland Hydrology Ir Irimary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1)	iny one indicator i l) (A2) (w/in 12") l/in 12")	s sufficien St In St M	<u>i)</u> Irface Soil Cracks (Indation Visible on	(B6) Aerial In Concave	nagery (B' Surface (l	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S	ed Leaves (I tterns (B10) espheres on Reduced In or soil color of s (C5) stressed Pla	Living Roots (C3) (within 1 on (C4) change w/in 12")
Vetland Hydrology In Primary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposit	nny one indicator i I) (A2) (w/in 12") v/in 12") s (B2)	s sufficien St Inc	t) urface Soil Cracks (undation Visible on parsely Vegetated (arl Deposits (B15)	(B6) Aerial In Concave	nagery (B' Surface (l w/in 12")	7) <u>×</u> 38) ×	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic	ed Leaves (fittems (B10)) espheres on Reduced Intersoil color (es (C5)) etressed Pla et Position (D	Living Roots (C3) (within 1 on (C4) change w/in 12")
Vetland Hydrology Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3)	nny one indicator i I) (A2) (w/in 12") I/in 12") s (B2)	s sufficien	th urface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) drogen Sulfide Od y-Season Water Ti	(B6) Aerial In Concave	nagery (B' Surface (l w/in 12")	7) <u>×</u> 38) ×	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu	ed Leaves (I terns (B10) espheres on Reduced Irr er soil color of s (C5) stressed Pla Position (D iltard (D3)	Living Roots (C3) (within 1 on (C4) change w/in 12") nts (D1)
Vetland Hydrology Informary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust	nny one indicator i (A2) (w/in 12") //in 12") s (B2)) t (B4)	s sufficien	t) urface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) urdrogen Sulfide Od	(B6) Aerial In Concave	nagery (B' Surface (l w/in 12")	7) <u>×</u> 38) ×	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24*, ca	ed Leaves (I terns (B10) espheres on Reduced Irr er soil color of s (C5) stressed Pla Position (D an perch H2	Living Roots (C3) (within 1 on (C4) change w/in 12") nts (D1) O w/in 12")
Vetland Hydrology Informary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust	nny one indicator i (A2) (w/in 12") //in 12") s (B2)) t (B4)	s sufficien	th urface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) drogen Sulfide Od y-Season Water Ti	(B6) Aerial In Concave	nagery (B' Surface (l w/in 12")	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) spheres on Reduced Irr r soil color of s (C5) stressed Pla Position (D an perch H2 aphic Relief I Test (D5)	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water)
Vettand Hydrology In Imary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3 Algal Mat or Crust Iron Deposits (B5)	nny one indicator i (A2) (w/in 12") //in 12") s (B2)) t (B4)	s sufficien St In St M H O	th urface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) drogen Sulfide Od y-Season Water Ti	(B6) Aerial In Concave	nagery (B' Surface (l w/in 12")	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) spheres on Reduced Irr r soil color of s (C5) stressed Pla Position (D an perch H2 aphic Relief I Test (D5)	Living Roots (C3) (within 1 on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water)
Vettand Hydrology Informary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5)	iny one indicator in (A2) (w/in 12") w/in 12") s (B2) t (B4) from ground sur	s sufficien St In St M Ht Do O	th inface Soil Cracks (undation Visible on parsely Vegetated (and Deposits (B15) odrogen Sulfide Od y-Season Water Ti ther (explain)	(B6) Aerial In Concave for (C1) (able (C2)	nagery (B' Surface (l w/in 12")) (w/in 24"	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) spheres on Reduced Irr r soil color of s (C5) stressed Pla Position (D an perch H2 aphic Relief I Test (D5)	Living Roots (C3) (within 1 on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water)
Vetland Hydrology In Primary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3 Algal Mat or Crust Iron Deposits (B5) Field Observations (In Surface Water Present	inv one indicator in (A2) (w/in 12") ifin 12") is (B2) it (B4) it (B4) it (From ground sure)	s sufficien St In St M K H O face):	inface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) ordrogen Sulfide Od y-Season Water Tither (explain)	(B6) Aerial In Concave for (C1) (able (C2)	nagery (B' Surface (l w/in 12")) (w/in 24"	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) spheres on Reduced Irr r soil color of s (C5) stressed Pla Position (D an perch H2 aphic Relief I Test (D5)	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water)
Sediment Deposit Drift Deposits (B3)	inv one indicator in the indicator in th	s sufficien	inface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) under Community (B15) under Com	(B6) Aerial In Concave for (C1) ('able (C2) vater (in.)	nagery (B Surface (I w/in 12")) (w/in 24"	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) spheres on Reduced Irr r soil color of s (C5) stressed Pla Position (D an perch H2 aphic Relief I Test (D5)	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water)
Vetland Hydrology In Primary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3 Algal Mat or Crust Iron Deposits (B5) Field Observations (In Surface Water Present?	inv one indicator in (A2) (w/in 12") (A2) (w/in 12") (iin 12")	s sufficien St In St M Hi Do Co face): No _ Eping in at	inface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) udrogen Sulfide Od y-Season Water Tither (explain) Depth of water to water the control of the control of water that depth but not y- tha	(B6) Aerial In Concave for (C1) (able (C2) vater (in.) vater (in.)	nagery (B' Surface (I w/in 12")) (w/in 24"	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24*, ca Microtopogr FAC Neutra (# OBL+FA	ed Leaves (I terns (B10) espheres on Reduced In resoil color of s (C5) tressed Pla Position (D altard (D3) an perch H2 aphic Relief I Test (D5) CW dominant	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water) s > # FACU+UPL dominants
Vetland Hydrology In Primary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3 Algal Mat or Crust Iron Deposits (B5) Field Observations (In Surface Water Present?	inv one indicator in (A2) (w/in 12") (A2) (w/in 12") (x/in 12")	s sufficien St In St M Hi Do Co face): No _ Eping in at	inface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) udrogen Sulfide Od y-Season Water To ther (explain) Depth of wo Depth to we that depth but not y- Depth to se	(B6) Aerial In Concave for (C1) (able (C2) vater (in.) yet filled? at. (in.)	nagery (B' Surface (I w/in 12")) (w/in 24"	7) 💥	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α α Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutra	ed Leaves (I terns (B10) espheres on Reduced In resoil color of s (C5) tressed Pla Position (D altard (D3) an perch H2 aphic Relief I Test (D5) CW dominant	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water) s > # FACU+UPL dominants
Vetland Hydrology Informary Indicators (a Surface Water (A1 High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3 Algal Mat or Crust Iron Deposits (B5) Field Observations (in Surface Water Present Water Table Present?	inv one indicator in (A2) (w/in 12") (A2) (w/in 12") s (B2) t (B4) from ground surface Yes X See Yes X ge)	s sufficien St In St M K H O face): No _ eping in at No _	inface Soil Cracks (undation Visible on parsely Vegetated (art Deposits (B15) drogen Sulfide Od y-Season Water Tither (explain) Depth of water to see the control of	(B6) Aerial In Concave for (C1) (able (C2) vater (in.) vater (in.) to Unkr	nagery (B' Surface (I' w/in 12")) (w/in 24"	7) X 38) X	Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. a.a. c Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24*, c Microtopogr FAC Neutra (# OBL+FA	ed Leaves (I tterns (B10) espheres on Reduced In r soil color of s (C5) stressed Pla Position (D altard (D3) an perch H2 aphic Relief I Test (D5) CW dominant	Living Roots (C3) (within 1: on (C4) change w/in 12") Ints (D1) O w/in 12") (D4) (caused by water) s > # FACU+UPL dominants





Site 006: Soil. Photo taken July 19, 2018.



Site 006: Soil. Photo taken July 19, 2018.





Site 006: Eastern view of vegetation. Photo taken July 19, 2018.



Site 006: Western view of vegetation. Photo taken July 19, 2018.

Project: Port I fan > Marget Borough/City: Kolik	Tsland Boroogh Date: 7/19/18
Applicant/Owner: DOT OF & Resim	Sampling Point #: 7
Investigator(s): Mac S. Mike D. Enily Hagnes Firm	HDP Alaska Inc
Lat. (dec.*) 57, 88671 7 Long152879777 ± NAD 83 Recorded	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landf	Slone (%): Aspect:
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	CODURY / CODORNA MAIL classification: (A.D. Go.
1/1	_ Veg Type (Viereck Level 4 or other): OATS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: Vo:	
Are Vegetation	
Are Vegetation	
SUMMARY OF FINDINGS	interrola ligity,
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes No X is the sampled ar within a wetland	
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
	In total >100%. Use 2012 indicator status. Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	
The state of the s	Number of Dominant Species That are OBL, FACW, or FAC: (A)
1 5 5	
3 7	Total Number of Dominant Species Across All Strata:
4 8	(B)
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: 67 (A/B)
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC. 67 (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cover: Sabling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Ha sa 10 _ THC 7	OBL species X1=
2. R. to spe 65 × FAW 8.	FACW species X2=
3. Og Her 5 PACU 9.	FAC species 75 x3= 225
4. Sam Fac Dec U10.	FACU species <u>74</u> x4= <u>296</u>
5	UPL + NL species X5=
	Column Totals: 149 (A) 521 (B)
Total Sapling/Shrub Cover:	249
50% of total cover: 40.5 20% of total cover: 6.2	Prevalence Index = B/A = 3.49
Herb Stratum , Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. (6) (55 45 X FAC 12.	
2. Ath fel 20 X FAC 13	Hydrophytic Vegetation Indicators:
3. Chn ana 3 PALV14.	Dominance Test is>50%
4	Prevalence Index is ≤3.0
5	Morphological Adaptations¹ (Provide supporting
6	data in Remarks or on a separate sheet)
7	Problematic Hydrophytic Vegetation ¹ (Explain)
9	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 68	
50% of total cover: 34 20% of total cover: 13.6	Hydrophytic \/
Circular 1/10-ac plot ★ or other plot dimension:	Vegetation Yes X No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Truc's Sal bar , Pon pal, vor vir, her may , egn arr,	In exp, to eur, epi cil. ardo
Very close to vet/up boundary ~ 10-15' away dow.	nelane.
US Army Corps of Engineers	Alaska Version 2.0 Modified by HDR

Profile Description: (Describe to the depth needed to document the indicator or confirm the absertance of the depth needed to document the indicator or confirm the absertance of the depth needed to document the indicator or confirm the absertance of the depth needed to document the indicator or confirm the absertance of the depth needed to document the indicator or confirm the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicators of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of the absertance of the depth needed to document the indicator of	α,α dip. (pos/ Remarks (or use comment number) fsa fsa fsa fsa tition: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted):
(in.) (opt.) Color (moist) % Color (moist) % Type¹ Loc² 2-5 O₁ 5-6 A-4 107R-7/2	Texture (pos) Remarks (for use comment number) fsal fsal fsa High organical tition: PL = Pore Lining, RC = Root Channel, M = Mate therwise noted): ilis²: One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
7-5 O; 6-6 AA OYE7/2 78 75/84/6 2 RC, RC 1-3 AA3 7.5 KM/6 10 YR 6/3 2 10 YR 6/3	tition: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted): 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
10 10 10 10 10 10 10 10	tition: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted): 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
1	tition: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted): 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locating Varic Soil Indicators (check ones that apply, measure from top of mineral layers unless oth tandard Indicators: Indicators for Problematic Hydric Soil Indicators (Called Sand Grains and S	tition: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted): 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locating Varic Soil Indicators (check ones that apply, measure from top of mineral layers unless oth tandard Indicators: Indicators for Problematic Hydric Soil Indicators for Problematic Hydric Hydric So	tion: PL = Pore Lining, RC = Root Channel, M = Matricherwise noted): iis³: One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locating Varic Soil Indicators (check ones that apply, measure from top of mineral layers unless oth tandard Indicators: Indicators for Problematic Hydric Soil Indicators for Problematic Hydric Hydric So	tion: PL = Pore Lining, RC = Root Channel, M = Mate therwise noted): iis³: One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locatily dric Soil Indicators (check ones that apply, measure from top of mineral layers unless oth tandard Indicators: Indicators for Problematic Hydric Soil Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) History Epipedon (A2) (8-16*organics, sat'd, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12*of ground surface; @* in this pit Alaska Redox with 2.5Y Hue	tion: PL = Pore Lining, RC = Root Channel, M = Mattherwise noted): iis³: One indicator of hydrophytic vegetation one primary indicator of wetland hydrology, and an appropriate landscape
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locating Varic Soil Indicators (check ones that apply, measure from top of mineral layers unless oth tandard Indicators: Indicators for Problematic Hydric Soil Indicators for Problematic Hydric Hydric So	tion: PL = Pore Lining, RC = Root Channel, M = Mate therwise noted): iis³: One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Locati lydric Soil Indicators (check ones that apply, measure from top of mineral layers unless oth standard Indicators: Indicators for Problematic Hydric Soil At Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) At Histic Epipedon (A2) (8-16* organics, sat'd, underlain by mineral soil with chroma ≤2) At Hydrogen Sulfide (A4) (within 12*of ground surface; At Alaska Redox with 2.5Y Hue	therwise noted): iis³: ³One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
Indicators (check ones that apply, measure from top of mineral layers unless oth standard Indicators: Indicators for Problematic Hydric Soil Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) Ac Histic Epipedon (A2) (8-16* organics, sat'd, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12*of ground surface; Alaska Redox with 2.5Y Hue	therwise noted): iis³: ³One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
tandard Indicators: Indicators for Problematic Hydric Soil A Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) Indicators for Problematic Hydric Soil A Alaska Color Change⁴ (TA4) Indicators for Problematic Hydric Soil A Alaska Color Change⁴ (TA4) A Alaska Alpine Swales (TA5) Indicators for Problematic Hydric Soil Alaska Color Change⁴ (TA4) Alaska Alpine Swales (TA5) Indicators for Problematic Hydric Soil Alaska Redox with 2.5Y Hue	ils ³ : ³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
M Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season) M Histic Epipedon (A2) (8-16" organics, sat'd, undertain by mineral soil with chroma ≤2) M Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape
sat'd during wet period of growing season) A Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) M Hydrogen Sulfide (A4) (within 12" of ground surface; in this pit A laska Color Change (1747) A laska Alpine Swales (TA5) A laska Redox with 2.5Y Hue	one primary indicator of wetland hydrology, and an appropriate landscape
Mc Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) M Hydrogen Sulfide (A4) (within 12" of ground surface; @" in this pit M Alaska Alpine Swales (TA5) M Alaska Redox with 2.5Y Hue	hydrology, and an appropriate landscape
underlain by mineral soil with chroma ≤2) ✓ Hydrogen Sulfide (A4) (within 12*of ground surface; @* in this pit	nocition must be present unless disturbe
surface; @" in this pit	or problematic.
surace; @in this pit	Give details of color change in Remarks
Thick Dark Surface (A12) Underlying Layer	Reduci
Alaska Gleyed (A13) Other (e.g., see p.91 of 2007	
Alaska Redox (A14) Supplement; explain in Remarks)	
Alaska Gleyed Pores (A15)	
Restrictive Layer (if present) Drainage Class:	
	lydric Soil Present? Yes No
Depth (inches)	
1. 2. 3. <u>-4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -</u>	
YDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): See	econdary Indicators (at least 2 are required)
	Water-Stained Leaves (B9)
	V Drainage Patterns (B10)
	Oxid'd Rhizospheres on Living Roots (C3) (within 12
A Saturation (A3) (w/in 12") A Sparsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4)
	(pos. σ,σ or soil color change w/in 12") Salt Deposits (C5)
	As Stunted or Stressed Plants (D1)
	Geomorphic Position (D2)
	Shallow Aquitard (D3)
Algal Mat or Crust (B4) — Other (explain)	(w/in 24", can perch H2O w/in 12")
<u> </u>	✓ Microtopographic Relief (D4) (caused by water) ✓ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)
Field Observations (in. from ground surface):	
Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.)	
Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Water Table Present? Yes No Depth to water (in.)	
Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Water Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled?:	retland Hydrology Present? Yes No X
Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Water Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled?:	/etland Hydrology Present? Yes No X





Site 007: Soil. Photo taken July 19, 2018.



Site 007: Soil. Photo taken July 19, 2018.





Site 007: Northern view of vegetation. Photo taken July 19, 2018.



Site 007: Western view of vegetation. Photo taken July 19, 2018.

Project: Part Lians Argent Borough/City KI	Date: 7/5/6
Applicant/Owner: DOT+ PF SC	Sampling Point #: 9
Investigator(s): MS, MD, EH	n: HDR Alaska, Inc.
Lat. (dec.°) 57, 885143 Long152.842361 ± NAD 83 Recorder	d on GPS #
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	dform: Flat Slope (%): Aspect
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear	Convex / concave NWI classification: PSCI /FMV
	Yeg Type (Viereck Level 4 or other): Sweet 4 4/2 - 5=
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	If no explain HGM type
Are Vegetation $\underline{\textbf{\textit{k}}}$, Soil $\underline{\textbf{\textit{k}}}$, or Hydrology $\underline{\textbf{\textit{N}}}$ significantly disturbed? Are "Normal Ci	rournstances present? Yes X No.
Are Vegetation $ olimits_{\mathcal{N}} $, Soil $ olimits_{\mathcal{N}} $, or Hydrology $ olimits_{\mathcal{N}} $ naturally problematic? If needed, explain	ain answers here
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes X No Is the sampled a within a wetlan	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover) %	
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Demisers Species
1 5 5	Number of Dominant Species 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: 100 (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Muttiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	81
1. # sin 1 _ FAC 7	
2. Sal bar 25 X FAC 8.	FACW species
3. Myr cal 10 OBL 9	FAC species 36 X3= 108
	FACU species X4=
6. Sal Fis 3 FACU 12.	UPL + NL species X5=
Total Sapling/Shrub Cover: 54	- Column Totals: 150 (A) 246 (B)
50% of total cover: 27 20% of total cover: 10 %	110
Herb Stratum	Prevalence Index = B/A = 1.60
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Cal Can 10 PAC 12.	
2. Car lun 65 × OBL 13.	Hydrophytic Vegetation Indicators:
3. Car can	Dominance Test is>50%
4. Com pa 20 × OBL 15.	Prevalence Index is ≤3.0
	Morphological Adaptations (Provide supporting
6	data in Remarks or on a separate sheet)
8 19	Problematic Hydrophytic Vegetation¹ (Explain)
9 20	
10 21	Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 96	
50% of total cover: 19.2	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes 7D %	Present?
78 6638.66	
To buse grand likely wonter at some point during g	Flowing season
Trace Agrala Inn Fil, equary, pur asa, tri enr. epi pal. 1.	ichan
US Army Corps of Engineers	Alaska Version 2.0 Modified by HDR

ofile Description: (Describe to the dep							Sampling Point	
	th needed to document the	e indicator	or confirm	the abse	nce of indicato	rs)		
epth Horizon Soil Matrix	F	ledox Feat	ures			a,a dip.		
in.) (opt.) Color (moist)	% Color (moist)	<u>%</u>	Type ¹	Loc2	Texture	(pos/ neg)	Rema for use comme	
<u> 11 0:</u>			_		TX I			
-15 Ashl 54617	90 7.5 YR5/4	10		<u>pc</u>	Fig	+		
5 17 1-47 104613 7-21 143 1048511	95 7.5184/6	5		RC	Fal	1	5% god	k of org
1-24 0.5				\equiv		\equiv		
ype: C = Concentration, D = Depletion,	RM = Reduced Matrix, C5	S=Coated S	Sand Grain	s 2Locatio	on::PL = Pore	Lining, RC	= Root Channel	M = Matri
ydric Soil Indicators (check ones that	apply, measure from top	of minera	l layers ur	less oth	erwise noted)	:		
tandard Indicators:	Indicators	for Proble	ematic Hy	dric Soils				
Histosol or Histel (A1) (≥16*organic s sat'd duning wet period of growing sea		a Color Cl	nange ⁴ (TA	4)	one	primary in	of hydrophytic v dicator of wetlar I an appropriate	d
Histic Epipedon (A2) (8-16* organics, underlain by mineral soil with chroma	≤2) — /\last	a Alpine S	Swales (TA	5)	pos	ition must t problematic	oe present unles	s disturbed
Hydrogen Sulfide (A4) (within 12"of g surface @ 17_" in this pit			vith 2.5Y H		⁴Gi		f color change i	n Remarks.
Thick Dark Surface (A12)		ka Gleyed v Iderlying L	without Hu ayer	e 5Y or R	edder			
Alaska Gleyed (A13)			p.91 of 2007					
Alaska Redox (A14)	Suj	oplement; ex	oplain in Ren	narks)				
Alaska Gleyed Pores (A15)			1	-				
estrictive Layer (if present)	Drainage (Pd				×	
Type: NONE Depth (inches)	Soil Map U	Init Name:		Ну	dric Soil Pres	ent?	Yes_X	No
						15		
YDROLOGY Vetland Hydrology Indicators (check o	nes that apply, measure f	rom soil s	urface):	Sec	ondary Indicat	ors (at leas	t 2 are required	
YDROLOGY	sufficient)		urface):	Sec	ondary Indicat Water-Stained			
YDROLOGY Vetland Hydrology Indicators (check or Primary Indicators (any one indicator is Surface Water (A1)	sufficient) Surface Soil Cracks	(B6)		XI.	Water-Stained Drainage Patt	d Leaves (B erns (B10)	39)	
Primary Indicators (check or Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12")	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated	(B6) n Aerial Im Concave S	nagery (B7)		Water-Stained Drainage Pati Oxid'd Rhizos Presence of F (pos. a.a. or	d Leaves (B terns (B10) pheres on l Reduced Iro soil color c	19) Living Roots (C:	
YDROLOGY Vetland Hydrology Indicators (check or Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1)	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15)	(B6) n Aerial Im Concave	agery (B7) Surface (B		Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a. or Salt Deposits	d Leaves (B terns (B10) spheres on l Reduced Iro soil color c (C5)	Living Roots (Con (C4) hange w/in 12")	
Vetland Hydrology Indicators (check of Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2)	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O	(B6) n Aerial Im Concave : dor (C1) (v	nagery (B7) Surface (B v/in 12")		Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St	d Leaves (B erns (B10) pheres on l Reduced Iro soil color o (C5) ressed Plan	S9) Living Roots (C3 in (C4) hange w/in 12")	
YDROLOGY Vetland Hydrology Indicators (check or Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1)	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15)	(B6) n Aerial Im Concave : dor (C1) (v	nagery (B7) Surface (B v/in 12")		Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a,a or Salt Deposits Stunted or St Geomorphic I Shallow Aquil	d Leaves (B10) pheres on leaduced Iro soil color of (C5) ressed Plan Position (D2) and (D3)	Living Roots (Can (C4) hange w/in 12") hts (D1)	
Print Deposits (B3) Print Deposits (B3) Print Deposits (B3) Print Deposits (Check of Check	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water	(B6) n Aerial Im Concave : dor (C1) (v	nagery (B7) Surface (B v/in 12")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat	d Leaves (B10) pheres on leduced Iro soil color c (C5) ressed Plan Position (D2) and (D3) perch H20 phic Relief	Living Roots (Can (C4) hange w/in 12") hts (D1)	3) (within 12
VDROLOGY Vetland Hydrology Indicators (check or Primary Indicators (any one indicator is 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)	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain)	(B6) n Aerial Im Concave : dor (C1) (v	nagery (B7) Surface (B v/in 12")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral	d Leaves (B10) pheres on leduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) perch H20 phic Relief (Test (D5)	Living Roots (Can (C4) hange w/in 12") hts (D1) D w/in 12")	3) (within 12
Primary Indicators (check or Primary Indicators (any one indicator is 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)	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain) ce):	(B6) n Aerial Im Concave s dor (C1) (v Table (C2)	agery (B7) Surface (B v/in 12") (w/in 24")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral	d Leaves (B10) pheres on leduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) perch H20 phic Relief (Test (D5)	Living Roots (Can (C4) hange w/in 12") hts (D1) O w/in 12") (D4) (caused by v	3) (within 12
Primary Indicators (check or Primary Indicators (any one indicator is 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) Field Observations (in. from ground surface Water Present?	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain)	(B6) n Aerial Im Concave s dor (C1) (v Table (C2)	sagery (B7) Surface (B v/in 12") (w/in 24")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral	d Leaves (B10) pheres on leduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) perch H20 phic Relief (Test (D5)	Living Roots (Can (C4) hange w/in 12") hts (D1) O w/in 12") (D4) (caused by v	3) (within 12
Primary Indicators (check or Primary Indicators (any one indicator is 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) Field Observations (in. from ground surface Water Present? Water Table Present? Yes Water Table Present?	sufficient) Surface Soil Cracks Inundation Visible o Sparsety Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain) ce): No Depth of the content of the conte	(B6) n Aerial Im Concave S dor (C1) (v l'able (C2) water (in.)	sagery (B7) Surface (B v/in 12") (w/in 24")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral	d Leaves (B10) pheres on leduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) perch H20 phic Relief (Test (D5)	Living Roots (Can (C4) hange w/in 12") hts (D1) O w/in 12") (D4) (caused by v	3) (within 12
Proposits (B4) Iron Deposits (B5) Field Observations (in. from ground surface Water Present? Avater Table Present? For Net Control of the	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain) ce): No Depth of the soil of the season was a season	(B6) n Aerial Im Concave : dor (C1) (v Table (C2) water (in.) yet filled?	sagery (B7) Surface (B w/in 12") (w/in 24")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. q.q or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral (# OBL+FAC	d Leaves (B erns (B10) spheres on land Reduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) an perch H20 phic Relief Test (D5) W dominants	Living Roots (C3) In (C4) hange win 12") Its (D1) D win 12") (D4) (caused by value) ***********************************	(within 12 vater)
VDROLOGY Vetland Hydrology Indicators (check or Primary Indicators (any one indicator is 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) Field Observations (in. from ground surface Water Present? Water Table Present? Seepi Saturation Present? Yes Seepi	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water Other (explain) ce): No Depth of the sum	(B6) n Aerial Im Concave : dor (C1) (v Table (C2) water (in.) yet filled?: sat. (in.)	sagery (B7) Surface (B v/in 12") (w/in 24")) <u>×</u>	Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" cat Microtopogra FAC Neutral	d Leaves (B erns (B10) spheres on land Reduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) an perch H20 phic Relief Test (D5) W dominants	Living Roots (C3) In (C4) hange win 12") Its (D1) D win 12") (D4) (caused by value) ***********************************	(within 12 vater)
Proposits (B4) Iron Deposits (B5) Field Observations (in. from ground surface Water Present? Avater Table Present? For Net Control of the	sufficient) Surface Soil Cracks Inundation Visible o Sparsely Vegetated Marl Deposits (B15) Hydrogen Sulfide O Dry-Season Water of the company of the compa	(B6) n Aerial Im Concave : dor (C1) (v Table (C2) water (in.) yet filled?: sat. (in.) to Unkn	sagery (B7) Surface (B v/in 12") (w/in 24"))	Water-Stainer Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Sait Deposits Stunted or St Geomorphic I Shallow Aquit (w/in 24" car Microtopogra FAC Neutral (# OBL+FAC	d Leaves (B erns (B10) spheres on land Reduced Iro soil color of (C5) ressed Plan Position (D2) and (D3) an perch H20 phic Relief Test (D5) W dominants	Living Roots (C3) In (C4) hange win 12") Its (D1) D win 12") (D4) (caused by value) ***********************************	3) (within 12



Site 009: Soil. Photo taken July 19, 2018.



Site 009: Soil. Photo taken July 19, 2018.



Site 009: Eastern view of vegetation. Photo taken July 19, 2018.



Site 009: Western view of vegetation. Photo taken July 19, 2018.

Applicant/Owner Dr 19 Sampling Point # 10 Interestingators; Intere	Project: Part / Borough/C	city: KIR	Date:
Investigation			
Lail (der. 1.17 17 14 1.17	Investigator(s): Mos S., Emily Haynes, Mile Dut	Firm: HDR Alaska, Inc.	
Subregion (circle cne): SE Segregophal Western Alectian Interior Northern Landforn: LallLette. Slope (%): 5. Aspect Land Local relief Shape across slope: 1604 convex Concave Michael Casification: LALL Control of Camera #: Veg Type (Viercet Level 4 or other): CELTS Are climate? hydrologic conditions on the site bytical for this time of year? Yes: X No			on map? x Field Map #: 5
Local relief: Shape across slope:	Subregion (circle one): SE Sectional Western Aleutian Interior	Northern Landform: killsnle	Slope (%): 5 Aspect: N
Photo nos/descriptions: jib. j.			
Are clamatic / hydrologic conditions on the site hybical for this time of year? Yes: No			
Are Vegetation M. Soil M. or Hydrology M. naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes No Remarks (e.g., marginal?): Vederand Hydrology Present? Yes No Remarks (e.g., marginal?): Ves Carlolar 100% Use 2012 Indicator status. Dominance Test worksheet: Total Tree Cover Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species That are OBL, FACV, or FAC: Total Hydrology Present of Dominant Species Tha			
Are Vegetation M Soil M or Hydrology			
SUMMARY OF FINDINGS			
Hydric Soil Present? Yes			
Welland Hydrotogy Present Yes	Hydrophytic Vegetation Present? Yes X No No		
Vestand Hydrology Present? Ves	Hydric Soil Present? Yes No _&		*
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total > 100% Use 2012 indicator status.			
Dominance Test worksheet: Species Cov.% Dom? Ind.	VEGETATION (Use scientific names.) Estimate absolute % cover (not re		
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC; Cov. Cov			
That are OBL, FACW, or FAC: (A) Total Number of Dominant Total Number of Dominant Species That are OBL, FACW, or FAC: (B) Percent of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species That are OBL, FACW, or FAC: (B) Percent of Dominant Species That are OBL, FACW, or FAC: Total Species Aross All Stratus Percent of Dominant Species That are OBL, FACW, or FAC: (B) Percent of Dominant Species That are OBL, FACW, or FAC: (CA) Total Species Total Specie		/ Doma (Ind.) Number of Dominion	
Total Number of Dominant Species Across All Strata Z (8)			
3			
Percent of Dominant Species The tare OBL, FACW, or FAC: DO (A/B)			tenta 7
That are OBL. FACW, of FAC: Sabina/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. FACW species Z X2=	4 8		(6)
Solid Cover Sapiling/Shrub Stratum (woody plants < 3" dbh) Abs. Cov.% Dom? Ind. Description Ind. Description Ind. I	Total Tree Cover:		
Sapiling/Shrub Stratum (woody plaints < 3' dbh) Abs.Cov.% Dom? Ind. FACW species 72	50% of total cover	Barriel and the second and the secon	(A/B)
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. OBL species X1=	Sapling/Shrub Stratum (woody plants < 3" dbh)		ar of Rhultimbe force
1	41	% Dom? Ind	
9.	1. Aln 58 _ PAC 7.	OBL species	
4	2 Sal her 50 X FAC 8.		1.0
11			
Total Sapling/Shrub Cover: 55 Total Sapling/Shrub Cover: 155 20% of total cover: 11 Abs. Cov. Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index = B/A = 3.09 Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0 April 15. Prevalence Index = B/A = 3.09 Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) Factor of Prevalence Index is ≤3.0 Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation' (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 63 Total Herb Cover: 64 Total Herb Cover: 65 Total Herb Cover: 65 Total Herb Cover: 65 Total Herb Cover: 71.5 Total Herb Cover: 65 Total Cover of Bryophytes 7 Total Herb Cover: 71.5			3 X4= 52
Total Sapling/Shrub Cover: 55 50% of total cover: 27.5 20% of total cover: 1 Prevalence Index = B/A = 3.09 Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Hydrophytic Vegetation Indicators: Abs.Cov.% Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index = B/A = 3.09 Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index = B/A = 3.09 Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index = B/A = 3.09 Hydrophytic Vegetation Indicators: Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) Face and 1 Provide supporting data in Remarks or on a separate sheet) Face and 2 Provide supporting data in Remarks or on a separate sheet) Provide supporting data in Remarks or on a separate sheet) Provide supporting data in Remarks or on a separate sheet) Provide supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provide supporting data in Remarks or on a separate sheet) Provide supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 2 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 3 Provides supporting data in Remarks or on a separate sheet) Hydrophytic Vegetation Provides supporting data in Remarks or on a separate sheet) Provides supporting data in Remarks or on a separate sheet) Hydrophytic Vegetation Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 3 Provides supporting data in Remarks or on a separate sheet) Total Herb Cover: 4 Provides supporting data in Remarks or on a separa			
So% of total cover: 27.5 20% of total cover: 1 Prevalence Index = B/A = 3.09 Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Cal Can US X PRU 12 Hydrophytic Vegetation Indicators: 2. Cha ana 1D FRU 13 Hydrophytic Vegetation Indicators: 2. Cha ana 1D FRU 15 PRU 15 PRU 15 Prevalence Index is \$3.0 — Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) 5. Sol lep 2 FRU 18 Problematic Hydrophytic Vegetation' (Explain) 8. 19 Problematic Hydrophytic Vegetation' (Explain) 10. 21. 'Indicators of hydric soli and wettand hydrology must be present unless disturbed or problematic. Total Herb Cover: 63 50% of total cover: 31.5 20% of total cover: 12.4 Hydrophytic Vegetation Present? Circular 1/10-ac plot X or other plot dimension: % of bare ground: Present? Kover of Wetland Bryophytes % Total Cover of Bryophytes % Total Cov	PC .	Column Totals:	8 (A) 365 (B)
Abs. Cov. % Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is <3.0 And fel 1 PAC 15. Abs. Cov. % Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is <3.0 And of Prevalence Index is <3.0 Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) Fau env 2 PAC 18. 19. 9. 10. 10. 21. 11. 22. Total Herb Cover: 22. Total Herb Cover: Solve of total cover: 12. 4 Hydrophytic Vegetation Fresent unless disturbed or problematic. Hydrophytic Vegetation Present? Yes No Present? No Remarks: Time Ithen, Issa now, Vib edn, Sam toc, Fes Fub, Sang Can, Seat Mac, Ma Spa, Bas Fass, The eas, Gal Hriftdun, Cas now, Vib edn, Sam toc, Fes Fub, Sang Can, Seat Mac, Ma Spa, Bas Fass, The eas, Gal Hriftdun, Cas now, Vib edn, Sam toc, Fes Fub, Sang Can, Seat Mac, Ma Spa, Bas Fass, The eas, Gal Hriftdun, Cas now, Vib edn, Sam toc, Fes Fub, Sang Can, Seat Mac, Ma Spa, Bas Fass, The eas, Gal Hriftdun, Cas now, Fes cil, Car et i			2 .0
Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind. 1. Cal Cun 45 X DRL 12. 2. Cha ann 10 FRU 13. 3. Ann 99 72 FRU 14. 4. All fel 1 FRU 15. 5. Sol lep 2 FRU 16. 6. Har max 1 FRU 17. 7. Fau env 2 FRU 18. 8. —————————————————————————————————		Prevalence Index	= B/A =
Can US C			
2. Cra and 10 FAU 13. 3. And sign 2. FACW 14. 4. AW fel 1 FAC 15. 5. Sol lep 2 FACW 16. 6. Her may 1 FACW 17. 7. Fan env 2 FAC 18. 8. 19. 9. 20. 10. 21. 11. 22. Total Herb Cover: 63 50% of total cover: 31.5 Circular 1/10-ac plot X or other plot dimension: % of bare ground: (where applicable) Remarks: Fince Inches, rash now, Vib edn, Sam tox, Fes tinh, Sang Can, Sea that, the sign, Bas rass, Triens, Gal triftum, Ran unc, Epi cil, Gar en i		6 Dom? Ind.	
3. Arc sen 7 FACW 14. 4. AM fel 1 FAC 15. 5. Sol lep 2 FACW 16. 6. Her max 1 FACW 17. 7. Fan env 2 FAC 18. 8.		Hydrophytic Vegeta	tion indicators:
- Prevalence Index is ≤3.0 Sol Lep Z		Dominance Te	est is>50%
5. Sol lep 2 FAW 16. 6. Her max 1 PAC 17. 7. Equi erv 2 PAC 18. 8. 19. 9. 20. 10. 21. 'Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 63 50% of total cover: 31.5 20% of total cover: 12.4 Hydrophytic Vegetation Fresent? Circular 1/10-ac plot X or other plot dimension: % of bare ground: Yes X No Present? **Remarks: Time Inchen, rash now, Vibedn, Sam tox, fest rub, Sang Can, 320 Mac, the spe, Bas rass, Time or, Gal triftdun, Ran unc, Epi cil, Car er i		Prevalence Inc	dex is ≤3.0
data in Remarks or on a separate sheet) 7. Equ env 2 PAC 18. 9.		Morphological	Adaptations ¹ (Provide supporting
8			
9		Problematic H	vdrophytic Vegetation ¹ (Explain)
10	8		,,,
total Herb Cover: 63 50% of total cover: 31.5 20% of total cover: 12.4 Hydrophytic Vegetation Present? Circular 1/10-ac plot X or other plot dimension: % of bare ground: Vegetation Present? (where applicable) Remarks: Trace Irchen, tash nav, Vibedn, Sam tax, Festich, Sang Can, Seat Max, Min spn, Bas tass, This ear, Gal triffdum, Ran unc, Epi cil, Ger eri		Stadionton of bushing	
Total Herb Cover: 63 50% of total cover: 31.5 20% of total cover: 12.4 Hydrophytic Vegetation Present? Circular 1/10-ac plot X or other plot dimension: % of bare ground: Vegetation Present? (where applicable) Remarks: Trace Irchen, rasa now, Vibeda, Sam rac, Fes rub, Sang can, Sea mac, the spa, Bas rass, This ear, Gal trifldum, Ran unc, Epi cil, Ger eri		be present unless dis	turbed or problematic
50% of total cover: 31,5 20% of total cover: 12.4 Hydrophytic Vegetation Present? Circular 1/10-ac plot X or other plot dimension: % of bare ground: Vegetation Present? (where applicable) Remarks: Trace Inchen, rasa now, Vibeda, Sam roc, Fes sub, Sang Can, ged mac, the spe, Bas ross, This ens, Gal trifldum, Ran unc, Epi cil, Gereri			
Circular 1/10-ac plot X or other plot dimension: % of bare ground: Vegetation Present? % Cover of Wetland Bryophytes % Total Cover of Bryophytes % (where applicable) Remarks: Trace Irchen, rosa nov, Vib edn, Sam roc, Fes rub, Sang can, sea mac, the spe, Bos ross, This ear, Gal trifldum, Ran unc, Epi cil, Ger eri	21 5	12/	
Circular 1710-ac plot X or other plot dimension: % Cover of Wetland Bryophytes % Total Cover of Bryophytes (where applicable) Remarks: Trace Irchen, rosa nov, Vibeda, Sam roc, Fes rub, Sang can, gear mac, the spa, Bas ross, This ear, Gal trifldum, Ran unc, Epi cil, Gereri		Vegetation	ves X No
(where applicable) Remarks: Frace Itchen, rosa nov, Vibedn, Sam roc, Fes rub, Sang can, gear mac, thin spa, Bas ross, Thi ens, Gal trifldum, Ran unc, Epi cil, Gereri		ground: Present?	110
Tri enr, Gal trifidum, Ran unc, Epi cil, Gereri	(where applicable)		
Tri enr, Gal trifidum, Ran unc, Epi cil, Gereri	Remarks: Frace Irchen, rosa nov, Vibeda, Sam roc,	Fes rub, sang can, gear man	, the spe . Box race .
			1 (100)
	US Army Corps of Engineers		Alaska Version 2.0 Modified by UDD

A30

Remarks:





Site 010: Soil. Photo taken July 19, 2018.



Site 010: Soil. Photo taken July 19, 2018.





Site 010: Southern view of vegetation. Photo taken July 19, 2018.



Site 010: Western view of vegetation. Photo taken July 19, 2018.

Project: Port Line Asport Borough/City: KI	3 Date: 7/19/18
Applicant/Owner: DOT IPF SC	Sampling Point #
Investigator(s): Mac S. Emily H. Mike Duff Firm:	HDR Alaska, Inc.
	on GPS #: Marked on map? Field Map #:5
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfe	Sing (%)
Local relief: Shape across slope: Index / convex / concave Shape up/downslope: Index /	CORVEY / CONCAVE NIA!! classification PS 41
Photo nos./descriptions:	Veg Type (Vierack Level 4 or other)
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. HGM type Slave
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circ	umstances" present? Yes Y No
Are Vegetation w, Soil w, or Hydrology naturally problematic? If needed, explain	answers here
SUMMARY OF FINDINGS	3.00.00
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes X 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	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species >
1 Pic sit 5 × File 5.	That are OBL, FACW, or FAC:(A)
2	Total Number of Dominant
3	Species Across All Strata: (B)
4	Percent of Dominant Species 75
Total Tree Cover: 5	That are OBL, FACW, or FAC: / (A/B)
50% of total cover: 2.5 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
2 Sal bor 5 PAC 8.	FACW species X2= Z
39	FAC species 128 x3= 384
4 10	FACU species 5 X4= 26
5 11	UPL + NL species X5=
6	Column Totals: 134 (A) 406 (B)
Total Sapling/Shrub Cover:	
50% of total cover: 40 20% of total cover: 16	Prevalence Index = B/A = 3.03
Herb Stratum	
##P. Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind. 1. Des sit 20 X F1/4 12.	
1. Des -it 20 X FAC 12.	Hydrophytic Vegetation Indicators:
3. Ang sen 1 Aku 14.	➤ Dominance Test is>50%
4. En aru 5 - FILC 15.	Prevalence Index is ≤3.0
5 Eq. (i) 7 EAC 16	Morphological Adaptations (Provide supporting
6 All 17	data in Remarks or on a separate sheet)
7	Problematic Hydrophytic Vegetation ¹ (Explain)
8,	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 49	
50% of total cover: 24.5 20% of total cover: 9.8	Hydrophytic
Circular 1/10-ac plot X or other plot dimension: % of bare ground: 5	Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes 5 %	Present?
(where applicable) Remarks: (i) At) a (i < t _)	
Cross Man will shull	
Truce: Salgal, 100 no, Car lun, Car can, agr exa, car bry, sol lap, US Army Corps of Engineers gen more, can MAC	Song can , com pal , the aun . In aut , and A.
US Army Corps of Engineers gen mac, Can MAC	Alaska Version 2 0 Modified by HDR

DIL		Sampling Point #:
rofile Description: (Describe to the depth needed	to document the indicator or confirm to	ne absence of indicators)
epth Horizon Soil Matrix	Redox Features	a,a dip.
(in.) (opt.) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture (pos/ Remarks neg) (or use comment number)
-3 0;		
6 C N3/1 -		90% smill grow
+ H 10/R2/2		
11 ASH 1048614 50	548314 10 _	16
11 110 5411 - 3	2 = (0 = 1/2 -	- O/
14 1347 546/1 90	7.5425/6 10	RGPL
11 Deb		
		21
		² Location: PL = Pore Lining, RC = Root Channel, M = Matrix
rdric Soil Indicators (check ones that apply, mea		
andard indicators:	Indicators for Problematic Hydi	One indicator of hydrophytic vegetation
Histosol or Histe! (A1) (≥16"organic surface, sat'd during wet period of growing season)	Alaska Color Change ⁴ (TA4	one primary indicator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd,	Alaska Alpine Swales (TA5)	hydrology, and an appropriate landscape position must be present unless disturbed
underlain by mineral soil with chroma ≤2)		or problematic.
Hydrogen Sulfide (A4) (within 12°of ground surface; @ 14 ° in this pit	Alaska Redox with 2.5Y Hu	Give details of color change in Remarks.
Thick Dark Surface (A12)	Alaska Gleyed without Hue Underlying Layer	5Y or Redder
Alaska Gleyed (A13)	Other (e.g., see p.91 of 2007	
X Alaska Redox (A14)	Supplement; explain in Rema	rks)
Alaska Gleyed Pores (A15)		
estrictive Layer (if present)	Drainage Class: Swfめ	
Type:	Soil Map Unit Name:	Hydric Soil Present? Yes X No
Depth (inches)	_	
'DROLOGY Vetland Hydrology Indicators (check ones that ap	oply, measure from soil surface):	Secondary Indicators (at least 2 are required)
rimary Indicators (any one indicator is sufficient)		Water-Stained Leaves (B9)
	ace Soil Cracks (B6)	Drainage Patterns (B10)
	dation Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (within 12')
Saturation (A3) (w/in 12") Spa	rsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4) (pos. a,a or soil color change w/in 12")
	Deposits (B15)	Salt Deposits (C5)
_	rogen Sulfide Odor (C1) (w/in 12")	Stunted or Stressed Plants (D1)
Drift Deposits (B3) Dry-	Season Water Table (C2) (w/in 24")	Geomorphic Position (D2) Shallow Aquitard (D3)
X Algal Mat or Crust (B4) Othe	er (explain)	(w/in 24", can perch H2O w/in 12")
Iron Deposits (B5)		Microtopographic Relief (D4) (caused by water)
		FAC Neutral Test (D5)
eld Observations (in. from ground surface):		(# OBL+FACW dominants > # FACU+UPL dominants)
urface Water Present? Yes No ×	Depth of water (in,)	
/ater Table Present? Yes No 🔀	Depth to water (in.)	
	at depth but not yet filled?	
aturation Present? Yes No 🟃		Wetland Hydrology Present? Yes X No
ncludes capillary fringe)	Epi Endo Unknown	
escribe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspection	ns), if available:
Remarks: Lange bluck depression during growing season.	u/ a/gal mat Connorthydry	but his Gurface water at your prost
Army Corps of Engineers	0 19" as well as secon	adory indicators Show that Enturation Alaska Version 2.0 Modified by HDR
typical at or above turn lev	el that is less likely to	occur in Ash, the previous 3 weeks
have been drien them norm	aut.	





Site 011: Soil. Photo taken July 19, 2018.



Site 011: Soil. Photo taken July 19, 2018.





Site 011: Southern view of vegetation. Photo taken July 19, 2018.



Site 011: Western view of vegetation. Photo taken July 19, 2018.

Project: Port Lines Airport Borough/City KIB	Date: 7/19/18
Applicant/OwnerBOT+AF S.K	Sampling Point #:/Z
Investigator(s): MS,EH, MD Firm:	
Lat. (dec.*) 57.184787 Long152.84864 ± NAD 83 Recorded c	on GPS#: X Marked on map? X Field Map #: 5
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm Flat Slope (%): Aspect:
Local relief: Shape across slope: dinea / convex / concave Shape up/downslope: dinea / convex / concave	convex / concave NWI classification:
Photo nos /descriptions: iPad - Panna Camera #:	Veg Type (Viereck Level-4 or other): BH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No.	_ If no, explain. HGM type:
Are Vegetation 1/2, Soil 1/2, or Hydrology 1/2 significantly disturbed? Are "Normal Circu	
Are Vegetation $ olimits_{\mathcal{N}} $, Soil $ olimits_{\mathcal{N}} $, or Hydrology $ olimits_{\mathcal{N}} $ naturally problematic? If needed, explain	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1	Number of Dominant Species That are OBL, FACW, or FAC: (A)
26	
3	Total Number of Dominant Species Across All Strata:
4 8 8 8	Species Across Air Strata. (B)
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:
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:
1. Sal par 8 X PHC 7.	OBL species X1=
2 8	FACW species 10 x2= 20
3 9	FAC species 103 x3= 309
4 10	FACU species
5	UPL + NL species X5=
6 12	Column Totals: 133(A) 409 (B)
Total Sapling/Shrub Cover: 8	
50% of total cover:	Prevalence Index = B/A = 3.08
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. <u>len mol</u> 15 FAC 12.	Hydrophytic Vegetation Indicators:
2. Cal can 75 & FAC 13	
4. Har max 5 FACU 15.	Prevalence Index is ≤3.0
5. San can 5 FACW 16.	
6. Ennary 5 - FAC 17.	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7. Ann gen 5 FACW18.	
8	Problematic Hydrophytic Vegetation¹ (Explain)
9	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 125	
50% of total cover: <u>62.5</u> 20% of total cover: <u>25</u>	Hydrophytic
Circular 1/10-ac plot X or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	
(where applicable) Ger-	W.C. Francisco
Remarks: Trace: Car pac, Fes' mb, Des sit, Pon pol, 501 lep, A	th tel, spi cil, theur
Plot stopped at fill prismi	
JS Army Corps of Engineers	Alaska Version 2.0 Modified by HDR

IL									Sampling Point #: 12_
ofile Description: (Describe to the de	pth neede	d to document the	indicator	or confirm	the abse	nce of indicati	ors)	
epth Horizon	Soil Matrix		Re	dox Feat	ures			a,a dip.	Samuel
n.) (opt.)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc2	Texture	(pos/ neg)	Remarks (or use comment number)
1/10/2				_					
4 <u>0i</u>				-		_		-	
5 4-61	2544/1	-				_	fal		Organic Stairing
7 Agh 2	10425/4	95	7.5424/4	5		RR	FSAL		Organia staining
14 A=63	104R4/1						Sa		
-70 A	7.5/R2.5/2	_			_	4	Sil	_	
		PM = Re	duced Matrix CS=	. — Coated S	Sand Grain	ns ² Locati	on: PL = Pore	Lining, RC	= Root Channel, M = Matri
dric Soil Indicator									
ndard Indicators:			Indicators f				s³:		
/ Histosol or Histe	I (A1) (≥16"organic	surface,	A Alaska	Color Ch	nange ⁴ (Ta	A4)			of hydrophytic vegetation, dicator of wetland
sat d duning we	et period of growing so (A2) (8-16" organics		4/ Alaska	Alnina S	Surples (T/	(5)	= hy	drology, and	d an appropriate landscape
underlain by m	ineral soil with chrom	a ≤2)					or	problematio	
Hydrogen Sulfid surface; @	in this pit	ground	Alaska					Sive details (of color change in Remarks
Thick Dark Surfa	ace (A12)		Alaska Und	i Gleyed v Jerlying Li		ie 5Y or F	reager		
Alaska Gleyed (A13)				p.91 of 200				
Alaska Redox (A			Supp	dement; ex	cplain in Re	marks)			
✓ Alaska Gleyed F	Pores (A15)								
								_	
			Drainage CI		(vc)			12	You No Y
estrictive Layer (if po Type:			Drainage Cl Soil Map Un		(we)	Hy	dric Soil Pre	esent?	Yes No_X
estrictive Layer (if po Type: Depth (inches)		51 - 2			(we)	Н	dric Soil Pre	esent?	Yes NoX
estrictive Layer (if po Type: Depth (inches) omments:					wc)	Н	ydric Soil Pre	sent?	Yes No _X
estrictive Layer (if po Type: Depth (inches) _ omments:					we	H	ydric Soil Pre	sent?	Yes No
estrictive Layer (if pr Type:					(we)	H	dric Soil Pre	sent?	Yes No X
estrictive Layer (if put	resent)	ones that	Soil Map Un	nit Name:				2	Yes No X
estrictive Layer (if progression of	resent)		Soil Map Un	nit Name:		Se		ators (at leas	st 2 are required)
estrictive Layer (if put Type: Depth (inches) Demments: DROLOGY etland Hydrology rimary indicators (if put	Indicators (check	s sufficient	Soil Map Un	om soil s		Ser _A	condary Indica Water-Stains	ators (at leased Leaves (laterns (B10)	st 2 are required) 89)
estrictive Layer (if put Type: Depth (inches) Depth (inches)	Indicators (check (any one indicator is	s sufficient	Soil Map Un	om soil s	urface):	Ser A	condary Indica	ators (at leased Leaves (laterns (B10)	st 2 are required) 89) Living Roots (C3) (within 12
estrictive Layer (if progression of proper in the progression of p	Indicators (check (any one indicator is	s sufficient	Soil Map Un apply, measure fro	om soil s B6) Aerial Im	urface): nagery (B7	Ser A A	condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of	ators (at leased Leaves (laterns (B10)	st 2 are required) 89) Living Roots (C3) (within 12 on (C4)
DROLOGY Tetland Hydrology Timary Indicators (High Water Table Saturation (A3) (Indicators (check (any one indicator is 11) a (A2) (w/in 12") w/in 12")	s sufficient Su Inu Sp	apply, measure from	om soil s B6) Aerial Im	urface): nagery (B7	Ser	condary Indicate Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. a.a.	ators (at leased Leaves (laterns (B10) aspheres on Reduced in or soil color of	st 2 are required) 89) Living Roots (C3) (within 12
DROLOGY Tetland Hydrology Timary Indicators High Water Tabk Saturation (A3) (Water Marks (B1)	Indicators (check (any one indicator is (A2) (w/in 12") w/in 12")	Sufficient Sufficient Sufficient Sufficient Sufficient Sufficient Maximum Suffic	apply, measure from the state of the state o	om soil s B6) Aerial Im	urface): nagery (B7 Surface (B	See	Condary Indicate Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ,σ o	ators (at leased Leaves (laterns (B10) ospheres on Reduced in or soil color (s (C5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12")
estrictive Layer (if progress) Type: Depth (inches) DROLOGY etland Hydrology rimary indicators (inches) Surface Water (A) High Water Table Saturation (A3) (inches) Water Marks (B1) Sediment Depos	indicators (check any one indicator is (1) at (A2) (w/in 12") w/in 12")	s sufficient L Su Inu Sp Ma Hy	apply, measure from the state of the state o	om soil s B6) Aerial Im Concave S or (C1) (v	urface): nagery (B7 Surface (B w/in 12")	Se: _AAS8) _AAA.	Condary Indicate Water-Staine Drainage Pate Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit	ators (at leased Leaves (latterns (B10) aspheres on Reduced Iror soil color os (C5) attended Pia	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12")
DROLOGY etland Hydrology (imary Indicators (A3) (Water Marks (B1)	indicators (check any one indicator is (1) at (A2) (w/in 12") w/in 12")	s sufficient Suff	apply, measure fro	om soil s B6) Aerial Im Concave S or (C1) (v	urface): nagery (B7 Surface (B w/in 12")	Se:	Condary Indicate Water-Staine Drainage Pate Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic	ators (at leased Leaves (in terms (B10) per per son Reduced in or soil color of s (C5) ciressed Plate Position (D	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12")
estrictive Layer (if progress) Type: Depth (inches) DROLOGY etland Hydrology rimary indicators (inches) Surface Water (A) High Water Table Saturation (A3) (inches) Water Marks (B1) Sediment Depos	Indicators (check (any one indicator is (A1) (a) (A2) (w/in 12") (w/in 12") (b) (B2) (B2)	s sufficient Suff	apply, measure from the state of the state o	om soil s B6) Aerial Im Concave S or (C1) (v	urface): nagery (B7 Surface (B w/in 12")	See	Condary Indicate Water-Staine Drainage Pa Coxid'd Rhizo Presence of (pos. σ,σ of Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca	ators (at leased Leaves (interns (B10) aspheres on Reduced Interns (C5) at ressed Plate Position (Daitard (D3) an perch H2	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12")
pestrictive Layer (if progress) Depth (inches) Depth (inches) DROLOGY Tetland Hydrology Timary Indicators Water Water (A High Water Table Saturation (A3) (inches) Water Marks (B1 Sediment Deposits (B1 Algal Mat or Crus	Indicators (check any one indicator is (A1) at (A2) (w/in 12") w/in 12")) its (B2) (B4)	s sufficient Suff	apply, measure fro	om soil s B6) Aerial Im Concave S or (C1) (v	urface): nagery (B7 Surface (B w/in 12")	Sec	Condary Indicate Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. α,α of Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24*, ca	ators (at leased Leaves (laterns (B10) aspheres on Reduced in results (C5) at least (C5) at least (D3) an perch H2 aphic Relief	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2)
pestrictive Layer (if progress) Depth (inches) Depth (inches) DROLOGY Tetland Hydrology Timary Indicators Water Water (A High Water Table Saturation (A3) (inches) Water Marks (B1 Sediment Deposits (B1 Algal Mat or Crus	Indicators (check any one indicator is (A1) at (A2) (w/in 12") w/in 12")) its (B2) (B4)	s sufficient Suff	apply, measure fro	om soil s B6) Aerial Im Concave S or (C1) (v	urface): nagery (B7 Surface (B w/in 12")	Sec	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) aspheres on Reduced In or soil color os (C5) atressed Plate Position (D3) an perch H2 aphic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12")
estrictive Layer (if progress) Depth (inches) Depth	indicators (check any one indicator is any one indicator indicator is any one indicator is any one indicator is any one indicator is any one indicator indicator is any one indicator indicator is any one indicator indicato	s sufficient Su Inc Sp Ma Hy Ot	Soil Map Un apply, measure fro the soil Cracks (undation Visible on parsely Vegetated Court Deposits (B15) rdrogen Sulfide Od y-Season Water Ta	om soil s B6) Aerial Im Concave S or (C1) (v able (C2)	urface): nagery (B7 Surface (B w/in 12") (w/in 24")	Sec	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) aspheres on Reduced In or soil color os (C5) atressed Plate Position (D3) an perch H2 aphic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (O4) (caused by water)
estrictive Layer (if progress of progress	Indicators (check (any one indicator is (A2) (w/in 12")) w/in 12")) its (B2) 3) st (B4) 5)	s sufficient Su Inu Sp Ma Hy Or Tace):	Soil Map Un apply, measure fro the soil Cracks (undation Visible on parsely Vegetated Court Deposits (B15) rdrogen Sulfide Od y-Season Water Ta	om soil s B6) Aerial Im Concave S or (C1) (v able (C2)	urface): nagery (B7 Surface (B w/in 12") (w/in 24")	Sec	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) aspheres on Reduced In or soil color os (C5) atressed Plate Position (D3) an perch H2 aphic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (O4) (caused by water)
estrictive Layer (if progress of progress	Indicators (check (any one indicator is 11) e (A2) (w/in 12") w/in 12")) its (B2) 3) st (B4) 5) n. from ground surf	s sufficient Su Inu Sp Ma Hy Ot	soil Map Un apply, measure fro i) undation Visible on parsely Vegetated (and Deposits (B15) vdrogen Sulfide Od y-Season Water To ther (explain)	om soil s B6) Aerial Im Concave S or (C1) (v able (C2)	urface): nagery (B7 Surface (B w/in 12") (w/in 24")	Sec	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) aspheres on Reduced In or soil color os (C5) atressed Plate Position (D3) an perch H2 aphic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (O4) (caused by water)
estrictive Layer (if programs) Depth (inches) Depth	Indicators (check (any one indicator is (1)) e (A2) (w/in 12") w/in 12") its (B2) 3) st (B4) 5) n. from ground surfactor is (1) re (A2) (w/in 12") yellow (1) its (B2) 7 Yes	s sufficient Sulphine Inc. Sp Ma Hy Oth Inc. No No	soil Map Un apply, measure fro i) undation Visible on parsely Vegetated (and Deposits (B15) vdrogen Sulfide Od y-Season Water To ther (explain)	om soil s B6) Aerial Im Concave S or (C1) (v able (C2)	urface): nagery (B7 Surface (B w/in 12") (w/in 24")	Sec	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) aspheres on Reduced In or soil color os (C5) atressed Plate Position (D3) an perch H2 aphic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (D4) (caused by water) s > #FACU+UPL dominants)
estrictive Layer (if progress) Depth (inches) Omments: DEPTH (inches) Omment (inches) Omm	Indicators (check (any one indicator is (1)) e (A2) (w/in 12") w/in 12") its (B2) 3) st (B4) 5) n. from ground surfactor is (1) re (A2) (w/in 12") yellow (1) its (B2) 7 Yes	s sufficient Su Inc Sp Ma Hy Ot No ping in at the series of the	apply, measure from the property of the proper	om soil s B6) Aerial Im Concave S or (C1) (v able (C2) ater (in.) ater filled?	urface): nagery (B7 Surface (8 w/in 12") (w/in 24")	See	Condary Indica Water-Staine Drainage Pa Oxid'd Rhizo Presence of (pos. σ.σ. σ. Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr	ators (at leased Leaves (laterns (B10) ospheres on Reduced In or soil color os (C5) otressed Plate Position (D3) an perch H2 aphic Relief i Test (D5) CW dominant	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (O4) (caused by water) s > #FACU+UPL dominants)
estrictive Layer (if progress) Type: Depth (inches)	Indicators (check (any one indicator is (1) e (A2) (w/in 12")) its (B2) 3) st (B4) 5) n. from ground surfrer Yes Yes Yes nge)	s sufficient Su Inc Sp Ma Hy Ot No ping in at the No	apply, measure from the property of the proper	om soil s B6) Aerial Im Concave S or (C1) (v able (C2) ater (in.) ater (in.) yet filled?	urface): nagery (B7 Surface (B7 N/in 12") (W/in 24")	See — A.	Condary Indicate Water-Staine Drainage Pa Coxid'd Rhizo Presence of (pos. σ,σ of Salt Deposit Stunted or S Geomorphic Shallow Aqu (w/in 24", ca Microtopogr FAC Neutral (# OBL+FAI	ators (at leased Leaves (laterns (B10) ospheres on Reduced In or soil color os (C5) otressed Plate Position (D3) an perch H2 aphic Relief i Test (D5) CW dominant	st 2 are required) B9) Living Roots (C3) (within 12 on (C4) change w/in 12") nts (D1) 2) O w/in 12") (O4) (caused by water) s > #FACU+UPL dominants)





Site 012: Soil. Photo taken July 19, 2018.



Site 012: Soil. Photo taken July 19, 2018.





Site 012: Eastern view of vegetation. Photo taken July 19, 2018.



Site 012: Western view of vegetation. Photo taken July 19, 2018.

oject: Part Lims Airport Borough/City: KI	B Date:
plicant/Owner: DOT+PF SC	Sampling Point #: 13
restigator(s): Mac Salway, Emily Hongres Mike Dofty Firm	n: HDR Alaska, Inc.
t. (dec.") 57. 86.829 Long152 85.2814 ± NAD 83 Recorded	d on GPS #: _ Marked on map? 🗶 Field Map #: 🖳
bregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	dform: hillslope Slope (%): 5 Aspect: 5
cal relief: Shape across slope: (linear / convex / concave Shape up/downslope: (linear	
	X Veg Type (Viereck Level 4 or other): OBF
e climatic / hydrologic conditions on the site typical for this time of year? Yes: $oldsymbol{X}$ No: _	
e Vegetation W., Soil W., or Hydrology W significantly disturbed? Are "Normal Ci	
e Vegetation 🚣 Soil 🚣, or Hydrology 🚣 naturally problematic? If needed, expla	ain answers here.
JMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No is the sampled	area
lydric Soil Present? Yes No within a wetlar	
Vetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
EGETATION (Use scientific names) Estimate absolute % cover (not relative cover). %	can total >100%. Use 2012 indicator status. Dominance Test worksheet:
ree Stratum (dbh≥ 3")	
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind Bet ken 55 X FAW 5.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
. Bet Ken 55 X PACU 5	-
7	Total Number of Dominant Species Across All Strata: (B)
8	(6)
Total Tree Cover: 55	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
50% of total cover: 27.5 20% of total cover:	Prevalence Index worksheet:
apling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
- HM 5/1 45 X FIK 7	FACW species X2=
Tub spe 70 X Frcu 8.	FAC species 57 x3= 171
10.	FACU species 147 x4= 588
	UPL + NL species X5=
12.	- Column Totals: 204 (A) 759 (B)
Total Sapling/Shrub Cover:	
50% of total cover: 58 20% of total cover: 23.2	Prevalence Index = B/A = 3,72
Herb Stratum	Trevalence much - bry -
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind	
-[n] can 2 _ PAC 12	Hydrophytic Vegetation Indicators:
Ath fel 10 × ENC 13.	Dominance Test is>50%
Trient 1 FACU 15.	Prevalence Index is ≤3.0
	Morphological Adaptations (Provide supporting
17.	data in Remarks or on a separate sheet)
18	Problematic Hydrophytic Vegetation¹ (Explain)
	Indicators of hydric soil and wetland hydrology must
1 22	be present unless disturbed or problematic.
Total Herb Cover: 33	
50% of total cover: 16, 5 20% of total cover: 6, 6	Hydrophytic
	Vegetation Yes No
Circular 1/10-ac plot for other plot dimension: % of bare ground:	- Present?
lemarks: Above motorroll site	

	e to the depth	needed	to document the	indicator	or confirm	rne abse	nce of indicato	015)	
Depth HorizonS	Soil Matrix	_	Re	dox Fea	tures			α,α dip.	
(in.) (opt.) Color	(moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ^t	Loc2	Texture	(pos/ neg)	Remarks (or use comment number)
2-2 0:									
3 1kh 10481	61						-FSal		
7 1362 104R	5/3	602	54R416	40	C	M	FSA	- 1	56 sand parke
-h Ash3 IDYR	5/4 9	6					30		
164	5/1	20							
-17 Oab			- 4						
	22.5/1.5			=			511		94
ype: C = Concentration, D =		-							= Root Channel, M = Matri
ydric Soil Indicators (check	ones that ap	pply, me	asure from top of	f minera	il layers ui	nless oth	erwise noted):	
tandard Indicators:			Indicators for	or Probl	lematic Hy	dric Soll	_		
Histosol or Histel (A1) (a	16"organic su	rface,	N Alaska	Color C	hange ⁴ (TA	\4)			of hydrophytic vegetation, dicator of wetland
sat'd during wet period of Histic Epipedon (A2) (8-			7.1						d an appropriate landscape
underlain by mineral soil			Alaska	Alpine S	Swales (TA	.5)	po	sition must	be present unless disturbed
Hydrogen Sulfide (A4) (surface; @ ' in the	within 12°of gro nis pit	bnuc	N Alaska	Redox	with 2.5Y H	lue		problemation ive details o	:. of color change in Remarks
Thick Dark Surface (A12)				Gleyed erlying L	without Hu .ayer	e 5Y or F	Redder		
Alaska Gleyed (A13)					p.91 of 2007				
Alaska Redox (A14)			Supp	lement, e	xplain in Rei	narks)			
Alaska Gleyed Pores (A1	15)				1				
Restrictive Layer (if present)			Drainage Cla	ass:	wel	1			
Туре:	16	_	Soil Map Un	it Name:		Н	dric Soil Pre	sent?	Yes No
Depth (inches)	12		Soil Map Un	it Name:	_	Ну	dric Soil Pre	sent?	Yes No
Depth (inches)	10		Soil Map Un	it Name:		Ну	dric Soil Pre	sent?	Yes No
Depth (inches) Comments:		es that a							Yes No
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator	rs (check one		pply, measure fro			Sec		tors (at leas	st 2 are required)
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one	rs (check one	ufficient)	pply, measure fro	m soli s		Sec	condary Indica	tors (at leas	st 2 are required)
Depth (inches) Comments: /DROLOGY Vetland Hydrology Indicator Primary Indicators (any one ASurface Water (A1)	rs (check one	ufficient)	pply, measure fro	m soli s	surface):	Sec AZ	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos	tors (at leas d Leaves (E tems (B10) spheres on	st 2 are required) 39) Living Roots (C3) (within 12
Depth (inches) Comments: YDROLOGY Vetland Hydrology indicator Primary Indicators (any one WSurface Water (A1) High Water Table (A2) (w.	rs (check one indicator is so (in 12")	ufficient) L Suri U Inur	pply, measure fro face Soil Cracks (I	m soli s 36) Aerial In	surface):	Sec. A.	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of	tors (at leas d Leaves (E terns (B10) spheres on Reduced In	st 2 are required) 39) Living Roots (C3) (within 12)
Depth (inches) Comments: CDROLOGY Vetland Hydrology indicator Crimary Indicators (any one A/Surface Water (A1) High Water Table (A2) (w./ A/Saturation (A3) (w/in 12)	rs (check one indicator is so (in 12")	M Surf N Inur	pply, measure fro face Soil Cracks (Indation Visible on preely Vegetated C	m soli s 36) Aerial In	surface):	Sec. A.	condary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. a,a or	tors (at leas d Leaves (E terns (B10) spheres on Reduced In	st 2 are required) 39) Living Roots (C3) (within 12)
Depth (inches) Comments: /DROLOGY Vetland Hydrology Indicator Primary Indicators (any one //Surface Water (A1) // High Water Table (A2) (w/ // Saturation (A3) (w/in 12") // Water Marks (B1)	rs (check one indicator is so (in 12")	M Surficient) N Surficient N Inur N Spa N Mar	pply, measure fro face Soil Cracks (Indation Visible on ursely Vegetated Co	m soli s B6) Aerial In	surface): magery (B7 Surface (B	Set AZ	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. a,a or Salt Deposits	tors (at leas d Leaves (E terns (B10) spheres on Reduced Iro soil color o (C5)	st 2 are required) 39) Living Roots (C3) (within 12) on (C4) change w/in 12")
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one VSurface Water (A1) VHigh Water Table (A2) (w/in 12') Water Marks (B1) V Sediment Deposits (B2)	rs (check one indicator is so (in 12")	W Spa N Spa N Mar N Hyd	pply, measure fro face Soil Cracks (Indation Visible on prsely Vegetated Co 1 Deposits (B15) progen Sulfide Odd	m soli s B6) Aerial In Concave	surface): magery (B7 Surface (B	Sec. A.A.A.A.B.B.A.M.	Ondary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. a,a on Salt Deposits Stunted or St	tors (at leas d Leaves (E terns (B10) spheres on Reduced for soil color of (C5) ressed Plat	st 2 are required) 39) Living Roots (C3) (within 12' on (C4) (C4) shange w/in 12")
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one VSurface Water (A1) High Water Table (A2) (w/ Saturation (A3) (w/in 12') Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	rs (check one indicator is so (in 12")	M Spa M Spa M Spa M Spa M Spa M Hyd M Dry	pply, measure fro face Soil Cracks (Indation Visible on prsely Vegetated Co 1 Deposits (B15) progen Sulfide Odd Season Water Ta	m soli s B6) Aerial In Concave	surface): magery (B7 Surface (B	Sec M A A 8) N N	ondary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. a,a or Salt Deposits Stunted or St Geomorphic	tors (at leas d Leaves (E terns (B10) spheres on Reduced Irc soil color o (C5) ressed Plai Position (Di	st 2 are required) 39) Living Roots (C3) (within 12° on (C4) shange w/in 12°) ants (D1)
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one A Surface Water (A1) High Water Table (A2) (w/ Saturation (A3) (w/in 12') Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	rs (check one indicator is so (in 12")	M Spa M Spa M Spa M Spa M Spa M Hyd M Dry	pply, measure fro face Soil Cracks (Indation Visible on prsely Vegetated Co 1 Deposits (B15) progen Sulfide Odd	m soli s B6) Aerial In Concave	surface): magery (B7 Surface (B	Sec M A A B B N N	vondary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. a,a or Salt Deposits Stunted or St Geomorphic Shallow Aqui (w/in 24", ca	tors (at leas d Leaves (E terns (B10) spheres on Reduced Irc r soil color of (C5) ressed Plai Position (D) tard (D3) n perch H2	st 2 are required) 39) Living Roots (C3) (within 12' on (C4) shange w/in 12") nts (D1) 2) O w/in 12")
Depth (inches) Comments: COMMEN	rs (check one indicator is so (in 12")	M Spa M Spa M Spa M Spa M Spa M Hyd M Dry	pply, measure fro face Soil Cracks (Indation Visible on prsely Vegetated Co 1 Deposits (B15) progen Sulfide Odd Season Water Ta	m soli s B6) Aerial In Concave	surface): magery (B7 Surface (B	Sec M A A A B B N N N	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Iro resoil color of (C5) ressed Plan Position (D3) in perch H2 sphic Relief Test (D5)	Living Roots (C3) (within 12' on (C4) change w/in 12") O w/in 12") (D4) (caused by water)
Depth (inches) Comments: DROLOGY Vetland Hydrology Indicator Primary Indicators (any one Surface Water (A1) High Water Table (A2) (w/in 12') Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	rs (check one indicator is st	M Surf M Surf M Inur M Spa M Mar M Hyd M Dry Oth	pply, measure fro face Soil Cracks (Indation Visible on prsely Vegetated Co 1 Deposits (B15) progen Sulfide Odd Season Water Ta	m soli s B6) Aerial In Concave	surface): magery (B7 Surface (B	Sec M A A A B B N N N	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Iro resoil color of (C5) ressed Plan Position (D3) in perch H2 sphic Relief Test (D5)	st 2 are required) 39) Living Roots (C3) (within 12' on (C4) shange w/in 12") nts (D1) 2) O w/in 12")
Depth (inches) Comments: CDROLOGY Vetland Hydrology Indicator Primary Indicators (any one Commany Indicators (B4) Commany Ind	rs (check one indicator is si	M Surf M Surf M Inur M Spa M Mar M Hyd M Dry Oth	pply, measure fro face Soil Cracks (Indation Visible on preely Vegetated Collinger (B15) progen Sulfide Odd Season Water Taler (explain)	m soli s 36) Aerial In Concave or (C1) (v ble (C2)	surface): nagery (B7 Surface (B w/in 12")) (w/in 24")	Sec M A A A B B N N N	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Iro resoil color of (C5) ressed Plan Position (D3) in perch H2 sphic Relief Test (D5)	Living Roots (C3) (within 12' on (C4) change w/in 12") O w/in 12") (D4) (caused by water)
Depth (inches) Comments: PDROLOGY Vetland Hydrology Indicator Primary Indicators (any one A Surface Water (A1) A High Water Table (A2) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) A Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from grant of the property of the position of the positio	rs (check one indicator is si	M Surf M Surf M Inur M Spa M Mar M Dry Oth	pply, measure fro face Soil Cracks (findation Visible on arsely Vegetated Crit Deposits (B15) frogen Sulfide Odd Season Water Taler (explain)	m soli s 36) Aerial Im Joncave or (C1) (v Johe (C2)	surface): magery (B7 Surface (B w/in 12")) (w/in 24")	Sec M A A A B B N N N	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Iro resoil color of (C5) ressed Plan Position (D3) in perch H2 sphic Relief Test (D5)	Living Roots (C3) (within 12' on (C4) change w/in 12") O w/in 12") (D4) (caused by water)
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one A Surface Water (A1) M High Water Table (A2) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) M Algal Mat or Crust (B4) M Iron Deposits (B5) Field Observations (in. from grant of the property of the position of	rs (check one indicator is so indicator indicator is so indicator indicator is so indicator indicator indicator is so indicator indicator indicator is so indicator in	W Surf W Inur W Spa W Mar W Hyd W Dry Oth	poply, measure from face Soil Cracks (Indation Visible on presely Vegetated Control of the Property of the Pro	om soli s 36) Aerial In Concave or (C1) (v bble (C2)	surface): magery (B7 Surface (B w/in 12")	Sec M A A A B B N N N	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Iro resoil color of (C5) ressed Plan Position (D3) in perch H2 sphic Relief Test (D5)	Living Roots (C3) (within 12° on (C4) change w/in 12°) on ts (D1) O w/in 12°) (D4) (caused by water)
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one A Surface Water (A1) M High Water Table (A2) (w. M Saturation (A3) (w/in 12') M Water Marks (B1) M Sediment Deposits (B2) M Algal Mat or Crust (B4) M Iron Deposits (B5) Field Observations (in. from ground or complete the complet	rs (check one indicator is standicator is standicat	W Spa W Mar W Hyd Dry Oth	pply, measure from face Soil Cracks (Indation Visible on preely Vegetated Colors (B15) (Independent of Season Water Tater (explain) Depth of was at depth but not yet.	m soll s B6) Aerial In Concave or (C1) (v ble (C2) ater (in.)	surface): nagery (B7 Surface (B) w/in 12")) (w/in 24")	Set AV AV AV AV AV AV	condary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. α,α on Salt Deposits Stunted or St Geomorphic Shallow Aqui (w/in 24", ca Microtopogra FAC Neutral (# OBL+FAC	tors (at leas d Leaves (B terns (B10) spheres on Reduced Irc r soil color of (C5) ressed Plai Position (D3) n perch H2: sphic Relief Test (D5)	Living Roots (C3) (within 12 on (C4) change w/in 12") onts (D1) O w/in 12") (D4) (caused by water) s > #FACU+UPL dominants)
Depth (inches) Comments: Proposition (A2) (w/in 12') Water Marks (B1) Water Marks (B1) Water Marks (B3) Water Deposits (B2) Water Deposits (B3) Mark (B4) Mark (B4) Mark (B4) Mark (B5) Mark (B4) Ma	rs (check one indicator is so indicator indicator is so indicator indicator is so indicator indicator indicator is so indicator indicator indicator is so indicator in	W Surf W Inur W Spa W Mar W Hyd W Dry Oth	pply, measure fro face Soil Cracks (findation Visible on arsely Vegetated Cot Deposits (B15) frogen Sulfide Odd Season Water Taler (explain) Depth of was at depth but not you depth to sa	m soli s 36) Aerial In Concave or (C1) (c) ble (C2) ater (in.) ater (in.) et filled?	surface): nagery (B7 Surface (B w/in 12")) (w/in 24")	Set AV AV AV AV AV AV	condary Indica Water-Staine Drainage Pat Oxid'd Rhizos Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aquil (w/in 24", ca Microtopogra FAC Neutral	tors (at leas d Leaves (B terns (B10) spheres on Reduced Irc r soil color of (C5) ressed Plai Position (D3) n perch H2: sphic Relief Test (D5)	Living Roots (C3) (within 12' on (C4) change w/in 12") onts (D1) O w/in 12") (D4) (caused by water) a > #FACU+UPL dominants)
Depth (inches) Comments: COMMEN	rs (check one indicator is strong indicator is strong in 12") round surface Yes Yes Seepine Yes _	M Surficient) M Surfi M Inur M Spa M Hyd M Dry Oth No g in at th	pply, measure from face Soil Cracks (Indation Visible on pursely Vegetated Colors (Indation Visible on pursely Vegetated Colors (Indation Visible Odd Season Water Taler (explain) Depth of was at depth but not you pepth to sa Epi Endo	m soli s B6) Aerial In Concave or (C1) (c) ble (C2) ster (in.) et filled? t. (in.) Unkn	surface): nagery (B7 Surface (B w/in 12")) (w/in 24")	Sec. A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	condary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. α,α οι Salt Deposits Stunted or St Geomorphic Shallow Aqui (w/in 24", ca Microtopogra FAC Neutral (# OBL+FAC	tors (at leas d Leaves (B terns (B10) spheres on Reduced Irc r soil color of (C5) ressed Plai Position (D3) n perch H2: sphic Relief Test (D5)	Living Roots (C3) (within 12 on (C4) change w/in 12") onts (D1) O w/in 12") (D4) (caused by water) s > #FACU+UPL dominants)
Depth (inches) Comments: YDROLOGY Vetland Hydrology Indicator Primary Indicators (any one A Surface Water (A1) High Water Table (A2) (w/in 12') Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground or comments (B5) Field Observations (in. from ground or comments (B5) Surface Water Present?	rs (check one indicator is strong indicator is strong in 12") round surface Yes Yes Seepine Yes _	M Surficient) M Surfi M Inur M Spa M Hyd M Dry Oth No g in at th	pply, measure from face Soil Cracks (Indation Visible on pursely Vegetated Colors (Indation Visible on pursely Vegetated Colors (Indation Visible Odd Season Water Taler (explain) Depth of was at depth but not you pepth to sa Epi Endo	m soli s B6) Aerial In Concave or (C1) (c) ble (C2) ster (in.) et filled? t. (in.) Unkn	surface): nagery (B7 Surface (B w/in 12")) (w/in 24")	Sec. A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	condary Indica Water-Staine Drainage Pat Oxid'd Rhizon Presence of I (pos. α,α οι Salt Deposits Stunted or St Geomorphic Shallow Aqui (w/in 24", ca Microtopogra FAC Neutral (# OBL+FAC	tors (at leas d Leaves (B terns (B10) spheres on Reduced Irc r soil color of (C5) ressed Plai Position (D3) n perch H2: sphic Relief Test (D5)	Living Roots (C3) (within 12 on (C4) change w/in 12") onts (D1) O w/in 12") (D4) (caused by water) s > #FACU+UPL dominants)





Site 013: Soil. Photo taken July 22, 2018.



Site 013: Soil. Photo taken July 22, 2018.





Site 013: Northern view of vegetation. Photo taken July 22, 2018.



Site 013: Eastern view of vegetation. Photo taken July 22, 2018.

Applicant/Owner	Project: Part Lines Hisport Borough/City: Kodink I	sho) Brough Date: 7/24/8
Investigation(13)	Applicant/Owner: DOT + PF SC	
Lat. (dec. 7 57. 176ch1 / Long - 153/5 268] 2. NAD 83 Recorded on GPS #: X. Manked on map? X. Field Map #: United to control (circle one): SE Spatisherial Western Aleutian Interior Northern Landform: A_I Col Siope (%): Capace 5 Local relief: Shape across slope: Fell? Connew Concave Shape updownstope: Jens / Convex Concave Mill classification: A Photo no aldescriptions:] I	Investigator(s): MS_EH_MD Firm: h	
Submignion (circle one): SE SouthSerring) Western Aeutlan Interior Northern Landform:		n GPS #: X Marked on map? X Field Map #: 4
Local refets: Shape across alone well by convex / concave Shape upidownslope: Jeers / concave Nivi classification: A Photo nos / descriptions: 1 Productions: 1 Productions		
Photo nos descriptions: 1 Person. Are vigetation of hydrologic conditions on the site hypical for this time of year? Yes:		
Are climatic hydrologic conditions on the site hypical for this time of year? Yes:No: If no, explainHGM type:		
Are VegetationSoilC or HydrologyA returally problematic? Are "Normal Circumstances" present? YesNo		
Are Vegetation Soll or hydrology naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydric Sol Present?		
SUMMARY OF FINDINGS		
Hydrophytic Vegetation Present? Yes		
Hydric Sol Present?	Hydrophytic Vegetation Present? Yes No >	
Vectand Hydrology Present? Yes	is the sampled are	
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.		
Dominance Test worksheet:		
Species	Call The Total (Ose scientific mariles.) Estimate absolute % cover (not relative cover). % call	
1		10
Column Total Species Column Total Column Tota		
3		
Solid Total Tree Cover: 20% of total cover: Sabilina/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind.	3.	Species Across All Strate:
Solid cover Sabina/Shrub Stratum (woody plants < 3" dbh)	4, 8,	(5)
Solid cover Sabina/Shrub Stratum (woody plants < 3" dbh)	Total Tree Cover:	Percent of Dominant Species That are ORL FACILITY OF F
Sabinashnub Stratum (woody plants < 3' dbh) Abs.Cov.% Dom? Ind. FACW species	200/ -Florida	That are ODE, PACYVIOLENC. (A/B)
Abs.Cov.% Dom? Ind. 1		Total % Court of Birthigh but
1	Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind	
FAC species 70 X3 = 240 FAC species 65 X4 = 260 II.		
Total Sapling/Shrub Cover: 11.	2 Kps não 5 FACU 8.	
Total Sapling/Shrub Cover: 58	3 SA Pul 2 EACH 9	
Total Sapling/Shrub Cover: 58 Total Sapling/Shrub Cover: 58 So% of total cover: 29 Abs.Cov.% Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index = B/A = 3, 39 Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is \$3.0 Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet) Fig. 17 Is. Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 95 Total Herb Cover: 95 Total Herb Cover: 95 Where applicable) Remarks: Traces for ball cover max for m		FACU species 65 X4= X60
Total Sapling/Shrub Cover: 58 50% of total cover: 29 20% of total cover: 11.6 Herb Stratum Abs. Cov. % Dom? Ind. 1. (a) (an 15		
Solid of total cover: 29 20% of total cover: 11.6 Prevalence Index = B/A = 3.39		Column Totals: 151 (A) 512 (B)
Herb Stratum	Total Sapling/Shrub Cover: 58	7.70
Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind. 1. Cal Can 15 2. If Fel 65 X PRC 13. 3. Sen th 1 FRCW 14. 4. San Can 5 FRCW 14. 4. San Can 7 FRCW 15. 5. Cha and 7 FRCW 17. 7. 18. 8. 19. 9. 20. 10. 10. 21. Total Herb Cover: 95 50% of total cover: 47.5 20% of total cover: 47.5 20% of total cover: 95 Circular 1/10-ac plot X or other plot dimension: % of bare ground: 0 Present? Remarks: Traces: Pop bal, Cat mac, har max, ang Sen. Bet Kan garaged up Shrubs	50% of total cover: 29 20% of total cover:	Prevalence Index = B/A = 3.37
1. Cal Can 15		
Hydrophytic Vegetation Indicators: 3.5en tal 1		
3. Sen fn! FW 14. Dominance Test is>50% Prevalence Index is ≤3.0 Dominance Test is>50% Dominance Test is 50% Dominance		Hydrophytic Vegetation Indicators:
Prevalence Index is \$3.0		Dominance Test is>50%
5. Cha and 9		Prevalence Index is ≤3.0
data in Remarks or on a separate sheet) 7		Morphological Adaptations (Provide supporting
8	6. Tri eur / 1 PAW 17.	
8	7 18	Problematic Hydrophytic Vegetation (Explain)
10		
Total Herb Cover: 95 50% of total cover: 47.5 20% of total cover: 19 Circular 1/10-ac plot X or other plot dimension: % of bare ground: 0 Present? **Cover of Wetland Bryophytes		Indicators of hydric call and continued by declary
Total Herb Cover: 95 50% of total cover: 47.5 20% of total cover: 19 Circular 1/10-ac plot X or other plot dimension: % of bare ground: 0 Vegetation Present? **Cover of Wetland Bryophytes 0 % Total Cover of Bryophytes 5 % (where applicable) **Remarks: Traces: Pop bal, car mac, har max, ang 50n. Bet kan grouped wy shrubs		
50% of total cover: 47.5 20% of total cover: 19 Circular 1/10-ac plot X or other plot dimension: % of bare ground: 0 Vegetation Present? % Cover of Wetland Bryophytes 0 % Total Cover of Bryophytes 5 % (where applicable) Remarks: Traces: Pop bal, car mac, har max, ang 50n. Bet kan grouped wy shrubs		
Circular 1/10-ac plot X or other plot dimension: % of bare ground: O Present? **Cover of Wetland Bryophytes O ** Total Cover of Bryophytes 5 ** (where applicable) Remarks: Traces * Pop bal, car mac, hor max ang 50 ** Bet kan grouped wy shrubs	117 - 10	Understude
Circular 1/10-ac plot X or other plot dimension: % of bare ground: Present? % Cover of Wetland Bryophytes O % Total Cover of Bryophytes % (where applicable) Remarks: Traces Pop bal, cat mac, har max any sen. Bet kan grouped wy shrubs		
Bet kan grouped up shrubs	% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	
Bet kan grouped up shrubs		
		Alaska Varsina 2.0 Madified by UDD

				1 ==					Sampling Point #: 14
Profile Description	: (Describe to the de	pth neede	d to document the	indicator	or confirm	the abser	ice of indicato	112)	
Depth Horizon	Soll Matrix		Re	dox Feat	lures			a,a dip.	
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	(pos/ neg)	Remarks (or use comment number)
0-3 0:					_				
3-4 ASAL	1042512						Fool		
4-6 AshZ	7.5425/4						156		
6-9 Ash3	107R613	\$0	4				50		
1-14 ASh4	104K7/1	60.	SVRY/6	40		RyM	50	_	
4-16 Oah							421		
10-17 P	5 VR 2.5/2			_			51	3.5	nodo moist
									C = Root Channel, M = Matri
	tors (check ones tha	t apply, me							
Standard Indicato			Indicators fo					ne indicato	r of hydrophytic vegetation,
	stel (A1) (≥16"organic wet period of growing s		Alaska Alaska	Color Cl	nange ⁴ (Ta	A4)	one	primary in	ndicator of wetland
Histic Epiped	оп (A2) (8-16" organic	s, sat'd,	N Alaska	Alpine S	wales (TA	(5)			d an appropriate landscape be present unless disturbed
	y mineral soil with chrom fide (A4) (within 12°of " in this pit		70		vith 2.5Y H		or I	problematic	
N Thick Dark St			100 100			e 5Y or Re	edder		- FR 1-1
				erlying L					
Alaska Gleye Alaska Redox			Other (p.91 of 200° oplain in Re				
Alaska Gleye									
Restrictive Layer (it			Drainage Cla	366,	wd				
LICATIONAC COACL IN	preactity		Drainage Oil	uos.	~~~				
11-20	Name		Soil Man Un	it Name		Hyd	iric Soil Pres	ent?	Yes No X
Type:	nme		Soil Map Un			Нус	iric Soil Pres		Yes No
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 13-43 7.5 3. 15-44 Re	2483/2 967 484/4-2031	datrix d	102/1 00	48	Draga	Sil	iric Soil Pres		moist
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 13-13 7.5 3. 13-14 Re	0483/2 967 484/4-203 A dak shriounds	datrix a	183/6 RC color padeets	48		sil	u o o	a ,	moist
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 19-13 7.5 3. 19-14 Re IYDROLOGY Wetland Hydrolog	YR3/2 967 YR4/4-Zo3 A dok surrounds	Adhrix a	R3/6 RC	48		Sil pour	No of	ors (at leas	moist- st 2 are required)
Type: Depth (inches) Comments: 1. 14-25 B 16 2. 14-4 Re IYDROLOGY Wetland Hydrolog	YR 3/2 967 YR 4/4 - 203 A data surrounds	Adrix o	R3/6 RC	4%		Second MA	nedsy Indicat	ors (at leas	moist- st 2 are required) B9)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. Ash 3 7.5 3. Ash 4 Re IYDROLOGY Wetland Hydrolog Primary Indicators ### Surface Water	YR3/2 967 YR4/4-203 A Jok surrounds by Indicators (check of (any one indicator is (A1)	ones that a sufficient	PAJC RC Lolor nic podcets pply, measure fro	4% .40% em soil s	urface):	Secretary A	ndary Indicat Water-Stained	ors (at lease d Leaves (I erns (B10)	m oisf- st 2 are required) B9)
Type: Depth (inches) Comments: 1. 19-25 B 19 2. 19-25 B 19 3. 19-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators Surface Water A/High Water Ta	YR 3/2 967 YR 4/4 - Zo ² 5 A Jok swrounds y Indicators (check of (any one indicator is (A1) ble (A2) (w/in 12")	ones that a sufficient)	PR3/L RC Lolor niz packets pply, measure fro face Soil Cracks (Findation Visible on A	.40% om soil si B6) Aerial Im	urface): agery (B7	Secondary MA	endary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F	ors (at lease de Leaves (Banda) pheres on Reduced Iro	st 2 are required) B9) Living Roots (C3) (within 12*
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 19-15 B 16 3. 19-14 Re IYDROLOGY Wetland Hydrolog Primary Indicators ### Saturation (A3	yR4/4-203 A dak swrrounds y Indicators (check of the character) (A1) ble (A2) (w/in 12")) (w/in 12")	ones that a sufficient) A Sur	pply, measure fro face Soil Cracks (findation Visible on arsely Vegetated C	.40% om soil si B6) Aerial Im	urface): agery (B7	Second M.	ondary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. a,a or	ors (at lease de Leaves (B10) pheres on Reduced Incolor of soil color of soil color of the soil color	st 2 are required) B9) Living Roots (C3) (within 12"
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 19-3 7.5 3. 19-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators Surface Water A High Water Ta W Saturation (A3 Water Marks (6)	y Indicators (check of (any one indicator is (A1) ble (A2) (w/in 12") (w/in 12")	ones that a sufficient) A Sur A Inu N Spa	pply, measure from the face Soil Cracks (Findation Visible on arrsely Vegetated Cri Deposits (B15)	m soil s m soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Second M.	ondary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. a,a or Salt Deposits	ors (at lease de Leaves (B10) pheres on Reduced Iros soil color of (C5)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 14-3 7.5 3. 14-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators ### Surface Water ### High Water Ta ## Saturation (A3 Water Marks (I) Sediment Dep	y Indicators (check of (any one indicator is (A1)) ble (A2) (w/in 12") (w/in 12") (w/in 12") (osits (B2)	ones that a sufficient) A Sur A Inu N Spa Ma Hyd	pply, measure from the face Soil Cracks (Findation Visible on arsely Vegetated Corl Deposits (B15) drogen Sulfide Odd	om soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Secondary Market	ondary Indicate Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str	ors (at leased Leaves (B10) pheres on Reduced Incolor of (C5) ressed Plan	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 14-3 7.5 3. 14-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators Water Marks (inches) Water Marks (inches) Sediment Deposits	y Indicators (check of the control o	ones that a sufficient) A Sur A Inu N Spa Ma Hyd	pply, measure from the face Soil Cracks (Findation Visible on a farsely Vegetated Corl Deposits (B15) throgen Sulfide Odd-Season Water Ta	om soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Second AL	Mary Indicate Water-Stainer Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str	ors (at leased Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plan Position (D.)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 14-3 7.5 3. 14-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators Water Marks (inches) Water Marks (inches) Sediment Deposits	y Indicators (check of the control o	ones that a sufficient) A Sur A Inu N Spa Ma Hyd	pply, measure from the face Soil Cracks (Findation Visible on arsely Vegetated Corl Deposits (B15) drogen Sulfide Odd	om soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Second AL	ondary Indicate Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24*, car	ors (at leased Leaves (B10) pheres on Reduced Incorrect (C5) ressed Plan Position (D3) and (D3) perch H2	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1) (C) (C) w/in 12*)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 14-3 7.5 3. 14-4 Re IYDROLOGY Wetland Hydrolog Primary Indicators Water Marks (inches) Water Marks (inches) Sediment Deposits	y Indicators (check of the control o	ones that a sufficient) A Sur A Inu N Spa Ma Hyd	pply, measure from the face Soil Cracks (Findation Visible on a farsely Vegetated Corl Deposits (B15) throgen Sulfide Odd-Season Water Ta	om soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Secretary AV	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease de Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plair Position (D3) an perch H2 phic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 13-3 7.5 3. 15-14 Re IYDROLOGY Wetland Hydrolog Primary Indicators Ly Surface Water Ly High Water Ta Water Marks (inches) Sediment Dep Drift Deposits (inches) Iron Deposits (inches)	y Indicators (check of the control o	ones that a sufficient? A Sur A Inu M Spa Mai M Hyo Oth	pply, measure from the face Soil Cracks (Findation Visible on a farsely Vegetated Corl Deposits (B15) throgen Sulfide Odd-Season Water Ta	om soil s B6) Aerial Im Concave S	urface): agery (B7 Surface (B	Secretary AV	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease de Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plair Position (D3) an perch H2 phic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1) (2) (O w/in 12*) (D4) (caused by water)
Type: Depth (inches) Comments: 1. 19-25 B 16 2. 13-3 7.5 3. 15-14 Re IYDROLOGY Wetland Hydrolog Primary Indicators Lysurface Water Lysurface Water Water Marks (I) Sediment Dep Drift Deposits (I) Iron Deposits (I)	y Indicators (check (any one indicator is (A1)) ble (A2) (w/in 12") B1) osits (B2) (B3) rust (B4)	ones that a sufficient? A Sur A Inu M Spa Mai M Hyo Oth	pply, measure from the face Soil Cracks (Findation Visible on a farsely Vegetated Corl Deposits (B15) throgen Sulfide Odd-Season Water Ta	m soil si m soil si B6) Aerial Im Concave S or (C1) (w	urface): agery (B7 Surface (B //in 12") (w/in 24")	Secretary AV	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease de Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plair Position (D3) an perch H2 phic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1) (2) (O w/in 12*) (D4) (caused by water)
Type: Depth (inches) Comments: 1. 19-25 B 19 2. 19-25 B 19 3. 19-14 Re IYDROLOGY Wetland Hydrolog Primary Indicators If Surface Water A High Water Ta Water Marks (I) Sediment Dep A Drift Deposits (I) Iron Deposits (I) Field Observations	y Indicators (check of any one indicator is (A1) ble (A2) (w/in 12") ble (A2) (w/in 12") osits (B2) (B3) rust (B4) (B5) (in. from ground surfacent? Yes	ones that a sufficient) A Sur A Inui N Spa Mai Hyd Oth	pply, measure from the particles of the particles of the particles of the particles of the property of the particles of the p	m soil some soil some soil soncave soncave sor (C1) (white (C2))	urface): agery (87 Surface (8 //in 12") (w/in 24")	Secretary AV	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease de Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plair Position (D3) an perch H2 phic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1) (2) (O w/in 12*) (D4) (caused by water)
Type: Depth (inches) Comments: 1. 14-25 B 16 2. 14-13 7.5 3. 14-14 Re YDROLOGY Wetland Hydrolog Primary Indicators Water Water Ta Water Marks (inches) Water Marks (inches) Comment Deposits (inches) Water Marks (inches) Iron Deposits (inches) Field Observations Surface Water Present	y Indicators (check of the control o	ones that a sufficient) A Sur A Inu No Oth No No	pply, measure from the process of th	m soil sim soil sim soil sim soil sim soil sim soil sim soncave sim soncave sim soncave sim	urface): agery (B7 Surface (B	Secretary AV	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease de Leaves (B10) apheres on Reduced Iros soil color of (C5) ressed Plair Position (D3) an perch H2 phic Relief (D5)	st 2 are required) B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) nts (D1) (C) (C) (C) (D4) (caused by water) (S) > #FACU+UPL dominants)
Type: Depth (inches) Comments: 1. 14-25 B 16 2. 14-13 7.5 3. 15-14 Re HYDROLOGY Wetland Hydrolog Primary Indicators Water Marks (inches) Water Marks (inches) Water Marks (inches) Algal Mat or Comment Deposits (inches) Iron Deposits (inches) Field Observations Surface Water Presidents	y Indicators (check of the control o	ones that a sufficient) A Sur A Inu No Oth No No	pply, measure from the poly, measure from the poly of	m soil s B6) Aerial Im Concave S or (C1) (w ble (C2) atter (in.) et filled?:	agery (B7 Surface (B v/in 12") (w/in 24")	Second M.	mdary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at lease d Leaves (Berns (B10)) spheres on Reduced Irosoil color of (C5) ressed Plair Position (D3) and (D3) and perch H2 phic Relief Test (D5) W dominants	st 2 are required) B9) Living Roots (C3) (within 12*) on (C4) change w/in 12*) nts (D1) 2) O w/in 12*) f (D4) (caused by water) s > # FACU+UPL dominants)
Type: Depth (inches) Comments: 1. 125 B 16 2. 133 7.5 3. 144 Re IYDROLOGY Wetland Hydrolog Primary Indicators I Surface Water Ta I Saturation (A3 Water Marks (I) Sediment Deposits (I) Iron Deposits (I) Field Observations Surface Water Prese Water Table Prese Saturation Present (includes capillary)	y Indicators (check (any one indicator is (A1)) ble (A2) (w/in 12") ble (A2) (w/in 12") B1) osits (B2) (B3) rust (B4) (B5) (in. from ground surfacent? Yes	ones that a sufficient Sur AL Inui Spa Mai Hyc Oth No Doing in at the	pply, measure from the policy	m soil s B6) Aerial Im Concave S or (C1) (w ble (C2) atter (in.) et filled?: t. (in.) Unknown	agery (B7 Surface (B	Second AV	pridary Indicat Water-Stained Drainage Patt Oxid'd Rhizos Presence of F (pos. α,α or Salt Deposits Stunted or Sta Geomorphic f Shallow Aquit (win 24", car Microtopogra FAC Neutral (# OBL+FACt	ors (at lease d Leaves (Berns (B10)) spheres on Reduced Irosoil color of (C5) ressed Plair Position (D3) and (D3) and perch H2 phic Relief Test (D5) W dominants	st 2 are required) B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) nts (D1) (C) (C) (C) (D4) (caused by water) (S) > #FACU+UPL dominants)





Site 014: Soil. Photo taken July 22, 2018.



Site 014: Soil. Photo taken July 22, 2018.





Site 014: Northern view of vegetation. Photo taken July 22, 2018.



Site 014: Southern view of vegetation. Photo taken July 22, 2018.

WETLAND DETERMINATION DATA FORM - Alaska Region Kadiak Isla Baroud Date: Borough/City: Applicant/Owner: DATIPE Sampling Point #: Mike Duff Firm: HDR Alaska, Inc. Long. _152.85127 ± NAD 83 Recorded on GPS#: X Marked on map? X Field Map #: Subregion (circle one). SE Southeentral Western Aleutian Interior Northern Landform: 4:1/4:12 Slope (%): ___ Local relief; Shape across slope: Inter / convex / concave Shape up/downslope: Inter / convex / concave NWI classification: 0551/EM1 _____Carnera #: _____ Veg Type (Viereck Level 4 or other): _____Carnera #: _____ Photo nos /descriptions: I lad - panas Are climatic / hydrologic conditions on the site typical for this time of year? Yes: 🔀 No: ____ If no, explain, HGM type: Slone Are Vegetation A. Soil A., or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No ____ Are Vegetation A., Soil ____, or Hydrology ___ naturally problematic? If needed, explain answers here, SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X No is the sampled area Hydric Soil Present? within a wetland? Wetland Hydrology Present? Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover), % can total >100%. Use 2012 indicator status. Dominance Test worksheet: Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. **Number of Dominant Species** 20 That are OBL, FACW, or FAC: (A) Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: 10 Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Abs.Cov.% Dom? Ind. **OBL** species FAC 7. **FACW** species **FAC** species **FACU** species **UPL + NL species** 12. Column Totals: 40 Total Sapling/Shrub Cover: 50% of total cover: 20 20% of total cover: Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind FAC12. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 22 Total Herb Cover: 50% of total cover: ____ 59 20% of total cover: 23,6 Hydrophytic Vegetation Present? Remarks: Trace: Agrah, luz mil, Car lyn, Can ten, Cham ang , Plan dil , Eri ang , Sol lex subspirature, Ean art, Eriz pare Halipper, and sen, and bor, got to Frdum vive pip y corps of Engineers friglo with palutre, tri eur, vto lang. Alaska Version 2.0 Modified by HDR

oth Horizon Soil Matrix	th needed to document th	Redox Feat				a a dip	
	% Color (moist)	%	Type ¹	Loc ²	Texture	(pos/	Remarks
(opt.) Color (moist)	No CONDITIONAL		1154			neg)	(or use comment number)
5 01	80 5485/8	- 20		OC. DI	Fool		14234
X 1361 51011		- 10	_	P A	Fal		
10 H3K 1 104K614	90 5485/8	- 70	_	1101	50		
15 Ashs JOYKS/1	70 7.5 1/65/4	_ 10		MIEC		$\overline{\Delta}$	
Zi Onb				_	2:1		Law course Sound
24 B IOTRNI					3/1		wined Un milet
		_ —		_		_	prize rugay 1
pe: C = Concentration, D = Depletion,	The Date of Market Ci		Cond Coni	——	n Pl = Por	e Lining RC	= Root Channel, M = Matrix
pe: C = Concentration, D = Depletion, tric Soil Indicators (check ones that	RM = Reduced Matrix, C	of minera	al lavers u	inless oth	rwise note	d):	
	Indicator	s for Probl	lematic H	ydric Soils	3.		
ndard Indicators:					3(r of hydrophytic vegetation,
Histosol or Histel (A1) (≥16"organic s sat'd during wet period of growing se	ason) — Alas	ka Color C	hange" (T	A4)	0	ne primary ir	ndicator of wetland
Histic Epipedon (A2) (8-16° organics	, satd, Alas	ka Alpine S	Swales (T	A5)	h	ydrology, an osition must	d an appropriate landscape be present unless disturbed
underlain by mineral soil with chroma	3 ≤2)				0	r problematic	C
Hydrogen Sulfide (A4) (within 12"of surface; @ 15_" in this pit	ground Alas	ka Redox	with 2.5Y	Hue	4	Give details	of color change in Remarks.
Thick Dark Surface (A12)				ue 5Y or R	edder		
Alaska Gleyed (A13)		Inderlying l er (e.g., s ee		17			
Alaska Redox (A14)	Oli ii	rbbjeweur: e	explain in Re	emarks)			
Alaska Gleyed Pores (A15)							
estrictive Layer (if present)	Drainage	Class:	pd			le l	
Type:	Soil Map	Unit Name		Ну	dric Soil Pr	esent?	Yes X No
Type.				-			
omments: 11 20	2						5 EN
Couldes stating 0 21" 120 DROLOGY		from soil	eurfaco\-	Sec	condary India	cators (at lea	st 2 are required)
DROLOGY etland Hydrology Indicators (check of	ones that apply, measure	from soil	surface):	Sec			st 2 are required)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient)		surface):		Water-Stair	ned Leaves ((B9)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator isSurface Water (A1)	ones that apply, measure s sufficient) Surface Soil Crack	s (B6)			Water-Stair Drainage P	ned Leaves (atterns (B10	B9))
DROLOGY etland Hydrology Indicators (check dimery Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12*)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible	s (B6) on Aerial li	magery (B	(7) ×	Water-Stair Drainage P Oxid'd Rhiz Presence o	ned Leaves (atterns (B10 cospheres or of Reduced li	B9) Living Roots (C3) (within 12' ron (C4)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is _ Surface Water (A1)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate	s (B6) on Aerial II d Concave	magery (B	(7) ×	Water-Stair Orainage P Oxid'd Rhiz Presence o (pos. α,α	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color	B9) Living Roots (C3) (within 12)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1	ss (B6) on Aerial II d Concave 5)	magery (B e Surface ((7) ×	Water-Stair Corainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos	ned Leaves (atterns (B10 cospheres or if Reduced II or soil color its (C5)	B9) Living Roots (C3) (within 12' ron (C4) change w/in 12')
DROLOGY etiand Hydrology Indicators (check of imary Indicators (any one indicator isSurface Water (A1) _ High Water Table (A2) (w/in 12") _ Saturation (A3) (w/in 12")	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1:	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(7) \ (88) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla	B9) Living Roots (C3) (within 12' on (C4) change w/in 12") ants (D1)
DROLOGY Stand Hydrology Indicators (check of imary Indicators (any one indicator isSurface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(7) \ (88) —	Water-Stair Drainage P Oxid'd Rhiz Presence c (pos. α,α Salt Depos Stunted or Geomorph	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (E	B9) Living Roots (C3) (within 12' on (C4) change w/in 12") ants (D1)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Hydrogen Sulfide (Dry-Season Water	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(7) \ (88) —	Water-Stair Drainage P Oxid'd Rhiz Presence of (pos. a.a Salt Depos Stunted or Geomorph Shallow Ad	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3)	B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1:	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(7) \ (88) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Ac (w/in 24*,	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2	B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1) OO w/in 12*)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Hydrogen Sulfide (Dry-Season Water	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(B8) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Aα (w/in 24*, Microtopog FAC Neutr	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9) Living Roots (C3) (within 12' on (C4) change w/in 12") ants (D1) O2) O w/in 12") f (D4) (caused by water)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1: YHydrogen Sulfide (Dry-Season Water Other (explain)	ss (B6) on Aerial li d Concave 5) Odor (C1)	magery (B e Surface ((w/in 12")	(B8) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Aα (w/in 24*, Microtopog FAC Neutr	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9) Living Roots (C3) (within 12' on (C4) change w/in 12") ants (D1) OO w/in 12")
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator isSurface 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) ield Observations (in. from ground surface)	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Hydrogen Sulfide (Dry-Season Water Other (explain)	is (B6) on Aerial II d Concave 5) Odor (C1) r Table (C2	magery (B e Surface ((w/in 12") 2) (w/in 24"	(B8) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Aα (w/in 24*, Microtopog FAC Neutr	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1) O2) O w/in 12*) f (D4) (caused by water)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) leld Observations (in. from ground surface Water Present? Yes	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Hydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth of	ss (B6) on Aerial II d Concave 5) Odor (C1) r Table (C2	magery (B e Surface ((w/in 12") 2) (w/in 24"	(B8) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Aα (w/in 24*, Microtopog FAC Neutr	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1) O2) O w/in 12*) f (D4) (caused by water)
DROLOGY etland Hydrology Indicators (check of imary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) ield Observations (in. from ground surface Water Present? Vater Table Present? Yes Vater Table Present?	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B16 Dry-Season Water Other (explain) face): No Depth of No Depth to	ss (B6) on Aerial II d Concave 5) Odor (C1) r Table (C2 f water (in.)	magery (B e Surface ((w/in 12") 2) (w/in 24"	(B8) —	Water-Stair Drainage P Oxid'd Rhiz Presence α (pos. α,α Salt Depos Stunted or Geomorph Shallow Aα (w/in 24*, Microtopog FAC Neutr	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9) Living Roots (C3) (within 12" on (C4) change w/in 12") ants (D1) O2) O w/in 12") f (D4) (caused by water)
DROLOGY Setiand Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Mart Deposits (B1) Y Hydrogen Sulfide Dry-Season Water Other (explain)	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in.	magery (B e Surface ((w/in 12") 2) (w/in 24"	(88)	Water-Stair Drainage P Oxid'd Rhiz Presence of (pos. q. q Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopos FAC Neutr (# OBL+F	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D juitard (D3) can perch H2 graphic Relie al Test (D5) ACW dominan	B9)) Living Roots (C3) (within 12" on (C4) change w/in 12") ants (D1) D2) 2O w/in 12") of (D4) (caused by water) sts > #FACU+UPL dominants)
DROLOGY Setland Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B19 X Hydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no	ss (B6) on Aerial II d Concave 5) Odor (C1) r Table (C2 f water (in. o water (in. ot yet filled o sat. (in.)	magery (B e Surface ((w/in 12") 2) (w/in 24"	(88)	Water-Stair Drainage P Oxid'd Rhiz Presence of (pos. q. q Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopos FAC Neutr (# OBL+F	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D quitard (D3) can perch H2 graphic Relie at Test (D5)	B9)) Living Roots (C3) (within 12" on (C4) change w/in 12") ants (D1) D2) 2O w/in 12") of (D4) (caused by water) sts > #FACU+UPL dominants)
DROLOGY etiand Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Mydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no Depth to Depth	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in. ot yet filled o sat. (in.) ondo Unk	magery (B e Surface ((w/in 12") 2) (w/in 24"	(88) — — — — — — — — — — — — — — — — — —	Water-Stair Orainage P Oxid'd Rhiz Presence of (pos. α, α Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopog FAC Neutr (# OBL+F	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D juitard (D3) can perch H2 graphic Relie al Test (D5) ACW dominan	B9)) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1) D2) 2O w/in 12*) of (D4) (caused by water) its > #FACU+UPL dominants)
DROLOGY Setland Hydrology Indicators (check of the control of the	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Mydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no Depth to Depth	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in. ot yet filled o sat. (in.) ondo Unk	magery (B e Surface ((w/in 12") 2) (w/in 24"	(88) — — — — — — — — — — — — — — — — — —	Water-Stair Orainage P Oxid'd Rhiz Presence of (pos. α, α Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopog FAC Neutr (# OBL+F	ned Leaves (atterns (B10 cospheres or of Reduced II or soil color its (C5) Stressed Pla ic Position (D juitard (D3) can perch H2 graphic Relie al Test (D5) ACW dominan	B9)) Living Roots (C3) (within 12* on (C4) change w/in 12*) ants (D1) D2) 2O w/in 12*) of (D4) (caused by water) its > #FACU+UPL dominants)
DROLOGY Setland Hydrology Indicators (check of the control of the	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Y Hydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no No Depth to Epi Ei s, monitoring well, aerial pi	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in. ot yet filled o sat. (in.) ndo Unk hotos, prev	magery (Be Surface (Win 12") 2) (Win 24") 1) 17 17: 15 15 15 15 15 15 15 15 15 15 15 15 15 1	(88) ———————————————————————————————————	Water-Stair Orainage P Oxid'd Rhiz Presence of (pos. α, α Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopoo FAC Neutr (# OBL+F	ned Leaves (attems (B10 cospheres or if Reduced II or soil color its (C5) Stressed Pla ic Position (I quitard (D3) can perch H; graphic Relie al Test (D5) ACW dominan	B9)) n Living Roots (C3) (within 12" ron (C4) change w/in 12") ants (D1) D2) 2O w/in 12") of (D4) (caused by water) ats > #FACU+UPL dominants) ant? Yes No
DROLOGY Setland Hydrology Indicators (check of the control of the	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Y Hydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no No Depth to Epi Ei s, monitoring well, aerial pi	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in. ot yet filled o sat. (in.) ndo Unk hotos, prev	magery (Be Surface (Win 12") 2) (Win 24") 1) 17 17: 15 15 15 15 15 15 15 15 15 15 15 15 15 1	(88) ———————————————————————————————————	Water-Stair Orainage P Oxid'd Rhiz Presence of (pos. α, α Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopoo FAC Neutr (# OBL+F	ned Leaves (attems (B10 cospheres or if Reduced II or soil color its (C5) Stressed Pla ic Position (I quitard (D3) can perch H; graphic Relie al Test (D5) ACW dominan	B9)) n Living Roots (C3) (within 12" ron (C4) change w/in 12") ants (D1) D2) 2O w/in 12") of (D4) (caused by water) ats > #FACU+UPL dominants) ant? Yes No
DROLOGY etiand Hydrology Indicators (check of imary Indicators (any one indicator is	ones that apply, measure s sufficient) Surface Soil Crack Inundation Visible Sparsely Vegetate Marl Deposits (B1: Y Hydrogen Sulfide (Dry-Season Water Other (explain) face): No Depth to ping in at that depth but no No Depth to Epi Ei s, monitoring well, aerial pi	ss (B6) on Aerial II od Concave 5) Odor (C1) or Table (C2 f water (in. o water (in. ot yet filled o sat. (in.) ndo Unk hotos, prev	magery (Be Surface (Win 12") 2) (Win 24") 1) 17 17: 15 15 15 15 15 15 15 15 15 15 15 15 15 1	(88) ———————————————————————————————————	Water-Stair Orainage P Oxid'd Rhiz Presence of (pos. α, α Salt Depos Stunted or Geomorph Shallow Ac (win 24*, Microtopoo FAC Neutr (# OBL+F	ned Leaves (attems (B10 cospheres or if Reduced II or soil color its (C5) Stressed Pla ic Position (I quitard (D3) can perch H; graphic Relie al Test (D5) ACW dominan	B9)) n Living Roots (C3) (within 12" ron (C4) change w/in 12") ants (D1) D2) 2O w/in 12") of (D4) (caused by water) ats > #FACU+UPL dominants) ant? Yes No





Site 016: Soil. Photo taken July 22, 2018.



Site 016: Soil. Photo taken July 22, 2018.





Site 016: Northern view of vegetation. Photo taken July 22, 2018.



Site 016: Eastern view of vegetation. Photo taken July 22, 2018.

Project: Port lions Hirpart	Borough/City:	KIR	Date:	7/22/18
Applicant/Owner: DOT1PF SL				oint #: 21
Investigator(s): Mac S. Milce D., E	mily H	Firm: HDR Ala		
	, "		#: Marked on map?	Field Map #: 4
Subregion (circle one): SE Southernre Western Al				
Local relief: Shape across slope: lipear (convex / podcav				
Photo nos./descriptions:	Camer	a#:_X_Veg	Type (Viereck Level 4 or othe	1) Mixal Forb
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes: _X	No: If no	, explain.	HGM type:
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> signific	antly disturbed? Are "Non	mal Circumstan	ces" present? Yes 🗶 No _	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ natural	ly problematic? If needed	, explain answe	rs here.	
SUMMARY OF FINDINGS				
Hydrophytic Vegetation Present? Yes X	No Is the san	pled area		
	No 🔀 within a	wetiand? You	es No_X	
Wetland Hydrology Present? Yes X	No	R	emarks (e.g., marginal?):	1,01
VEGETATION (Use scientific names.) Estimate absolu	te % cover (not relative cover			status.
Tree Stratum (dbh≥ 3")		Don	ninance Test worksheet:	
Species Cov.% Dom? Ind. Species	Cov.% Dom?		ber of Dominant Species	3 "
			are OBL, FACW, or FAC:	(A)
2 6			Il Number of Dominant cies Across All Strata:	3
3				(B)
Total Tree Cover:			cent of Dominant Species	106
The second secon			t are OBL, FACW, or FAC:	(A/B)
	0% of total cover:		Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (woody plants < 3" dbh) , Abs.Cov.% Dom? Ind.	Abs.Cov.% Dom?	ind.		X1= Z
1. 50 sit 9 & FAC 7.			species	X1= Z/2
2. Alm sin FAC 8.			W species	x2= x3=
3 9			species <u>47</u>	The state of the s
4			U species	X4= 8
5 11 6 12.			+ NL species	X5=
	0	— Colu	umn Totals: 157 (A)	<u> 366 (B)</u>
Total Sapling/Shrub Cover:	0% of total cover: 1.8			737
	0% of total cover: 1.8	_	Prevalence Index = B/A =	4,) 4
Herb Stratum Abs.Cov.% Dom? Ind.	Abs. Cov.% Dom?	Ind.		
1. Cal can 2 - FAC 12. San	0 4 4	FACH	Irophytic Vegetation Indicat	loom!
2. Des her 15 FAC 13. Gal	trifio 5	PACO		1018.
3. Car pac 5 - FAC-14. Sol	1ep 2		C Dominance Test is>50% C Prevalence Index is ≤3.0	
4. Hie odo 3 - FACW 15 FACW 16.				
5. Hor 6/M 5 PAC 17			Morphological Adaptations data in Remarks or on a	
7. Am con 5 PACW18.				
8. Rum arec 2 OBLETHE 19.			Problematic Hydrophytic \	/egetation: (Explain)
9. Gen Mac 2 PAC 20.				
10. Am cha 70 X FACH 21.			dicators of hydric soil and wet present unless disturbed or pr	
11. Ath to 5 PAC 22.		be i	resent unless disturbed of pr	obiemanc.
	49			
50% of total cover: 74.5 2	0% of total cover: 29. 8		frophytic yetation Yes	No
Circular 1/10-ac plot X or other plot dimension:	% of bare ground:	Pre	sent?	110
% Cover of Wetland Bryophytes% Tota (where applicable)	al Cover of Bryophytes 23	 %		
Remarks: Trave: Sal bar, Ely trach	Lat no Day	nc. Eni c	il Rorice, Ste	sit, Car umb.
Cime sal por 1 til Timen	(but) Kay of	~) - p. c		
Us Aug Sans of Essience			Alaska Vi	on 2.0 Modified by HDR
US Army Corps of Engineers			CARRIED A DISH	





Site 021: Soil. Photo taken July 22, 2018.



Site 021: Soil. Photo taken July 22, 2018.





Site 021: Eastern view of vegetation. Photo taken July 22, 2018.



Site 021: Western view of vegetation. Photo taken July 22, 2018.

Project: Part Lions	Borough/0	City: KTB	Date:
Applicant/Owner: DoT + PF			Sampling Point # 22
Investigator(s): Mac S. Fmily	1. Mike D.	Firm: HC	DR Alaska, Inc.
Lat. (dec.°) 57 975/93 Long15	2. 149503 ± N	AD 83 Recorded on	GPS #: Marked on map? Field Map #: 4
			n: 1/1/11/10 Slope (%): Aspect:
Local relief: Shape across slope: dingen/ convex/			
Photo nos./descriptions:			Veg Type (Viereck Level 4 or other)
Are climatic / hydrologic conditions on the site typic			
Are Vegetation 1. Soil 1. or Hydrology 1.			
Are Vegetation, Soil, or Hydrology	naturally problematic?	If needed, explain ar	nswers here
SUMMARY OF FINDINGS			
Hydrophytic Vegetation Present? Yes X	No	is the sampled area	
Hydric Soil Present? Yes	No_ ×	within a wetland?	Yes No
Wetland Hydrology Present? Yes	No X		Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate	absolute % cover (not re	elative cover). % can	total >100%. Use 2012 indicator status.
Tree Stratum (dbh≥ 3")			Dominance Test worksheet:
	ecies Cov 9	6 Dom? Ind	Number of Dominant Species
1 5			That are OBL, FACW, or FAC:
2			Total Number of Dominant
3 7			Species Across All Strata: 2 (B)
Total Tree Cove	_		Percent of Dominant Species 100
The second secon			That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind.	Abs.Cov.	% Dom? Ind.	Total % Cover of: Multiply by:
1. All sin 95 X FAC 7	7.55.004.	70 DOM'T ING.	OBL species X1=
2. Sam rac 15 FACUS.			FACW species
3. Kyb spe 5 _ FACUS.			FAC species 103 x3= 309
410			FACU species <u>d8</u> x4= <u>11Z</u>
6. 11. 12.			UPL + NL species X5=
	. 1/5		Column Totals: 191 (A) 541 (B)
Total Sapling/Shrub Cove	·	-1	202
50% of total cover: 57.5	_ 20% of total cover:	73	Prevalence Index = B/A = 293
Herb Stratum Abs.Cov.% Dom? Ind.	Abs. Cov.	% Dom? Ind.	
1. Her max 8 FACU12	Abs. 00v.	boili ilia.	
2. Foi ci 2 PAC 13.			Hydrophytic Vegetation Indicators:
3. Pan unc 1 FAC 14		V. 1.1	Dominance Test is>50%
4. Gen mac 5 MAC15.	-		Prevalence Index is ≤3 0
5. Cic alp 60 × PACW 16.			Morphological Adaptations (Provide supporting
6		- -	data in Remarks or on a separate sheet)
			Problematic Hydrophytic Vegetation (Explain)
9 20			
10 21			Indicators of hydric soil and wetland hydrology must
11 22	7/	4 I	be present unless disturbed or problematic.
Total Herb Cove	76	1-0	
50% of total cover: 38	_ 20% of total cover:	15.6	Hydrophytic Vegetation Yes No No
Circular 1/10-ac plot or other plot dimension. % Cover of Wetland Bryophytes % (where applicable)	% of bar Total Cover of Bryoph	e ground: \	Vegetation Present?
Remarks: Trace for put , any sen	, cha ang, Rus	tere Tale	f. Ath fel, about laken
, , , ,	, ,, ,,	000	Transfer of the second

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR

epth Horizo	n Soil Matrix		d to document the i	dox Feat				a,a dip.	
epth Horizo in.) <u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc2	Texture	(pos/	Remarks
10pt.)	Odior (moist)	<u> 70</u>	Odor (moist)	70	Type	LOC	Textore	neg)	(or use comment number
4 0:				_	-	_		_	
	4	_				_		0	
10 BIC	7.5483/2	90			_		51		908 grands
	25/3/1	10						1	
							100		IV A
				_	_				4
									= Root Channel, M = Mat
dric Soil Indi	cators (check ones that	t apply, me							
andard Indica			Indicators fo	or Proble	matic Hy	dric Soll:			
∠ Histosol or sat'd du	Histel (A1) (≥16"organic ring wet period of growing se	surface, eason)	_// Alaska	Color Ch	nange ⁴ (TA	(4)			of hydrophytic vegetation dicator of wetland
/ Histic Epip	edon (A2) (8-16° organic	s, sat'd,	1 Alaska	Atnine S	wales (TA	5)	hyd	rology, and	l an appropriate landscap
	n by mineral soil with chrom		777					ition must i problematic	be present unless disturbe
Hydrogen : surface;	Sulfide (A4) (within 12"of	Gunua	✓ Alaska	Redox w	ith 2.5Y F	lue	⁴ Gi	ve details o	f color change in Remark
	Surface (A12)		<u>//</u> Alaska Unde	Gleyed vertying La		e 5Y or R	edder		
Alaska Gle					.91 of 2007				
Alaska Rei			Suppl	ement; ex	plain in Rei	narks)			
	yed Pores (A15)				-				
estrictive Laye			Drainage Cla		لميا				Yes No_X
Type:	nme		Soil Map Uni	4 1		I Liv	drie Call Dree	0012	Yes No No
Depth (incheomments:				t Name.			dric Soil Pres	GILL	2 - Sec. 04
Depth (inchiomments: DROLOGY etland Hydrolimary Indicato	ogy indicators (check one of the control of the con	sufficient)	pply, measure from	m soll sı	urface):	Sec	ondary Indicate Water-Stained	ors (at leas Leaves (B	t 2 are required) 9)
Depth (inchomments: DROLOGY Tetland Hydrolimary Indicato Surface Wa	ogy indicators (check ors (any one indicator is ter (A1)	sufficient)	pply, measure from	m soll su		Sec N	ondary Indicate Water-Stained Drainage Patt	ors (at leas Leaves (B ems (B10)	t 2 are required) 9)
Depth (inchomments: DROLOGY Vetland Hydrolrimary Indicato V Surface Wa	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12")	sufficient) A Sur	pply, measure from face Soil Cracks (E ndation Visible on A	m soll su 36) Aerial Ima	agery (B7)	Sec.	ondary Indicate Water-Stained Drainage Patt	ors (at leas Leaves (B erns (B10) pheres on I	t 2 are required) 9) Living Roots (C3) (within 12
Depth (inchomments: DROLOGY etland Hydrol imary Indicato Surface Wa High Water Saturation (ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12")	s sufficient) A Sur Inui	pply, measure from face Soil Cracks (B ndation Visible on A ursely Vegetatêd Cr	m soll su 36) Aerial Ima	agery (B7)	Sec.	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. q,q or	ors (at leas Leaves (B erns (B10) pheres on l educed Iro soil color ci	t 2 are required) 9) Living Roots (C3) (within 12
DROLOGY etland Hydrol minary Indicato Surface Wa High Water Saturation (Water Mark	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1)	s sufficient) A/ Sur Inur Spa Mar	pply, measure from face Soil Cracks (B andation Visible on A arsely Vegetated Co	m soil su 36) Aerial Ima oncave S	agery (B7) Surface (B	Sec.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. q,q or Salt Deposits	ors (at leas Leaves (B erns (B10) pheres on l educed Iro soil color of (C5)	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) hange w/in 12")
DROLOGY Tetland Hydrol Timary Indicato Surface Wa High Water Saturation (Water Mark	ogy indicators (check of the control	s sufficient) A/ Sur Inur Spa Mar	pply, measure from face Soil Cracks (B ndation Visible on A arsely Vegetatêd Co th Deposits (B15) drogen Sulfide Odo	m soll su 36) Aerial Ima oncave S r (C1) (w	agery (B7) Surface (B Vin 12")	Sec.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str	ors (at leas Leaves (B erns (B10) pheres on l educed Iro soil color ci (C5) essed Plan	(2 are required) (9) Living Roots (C3) (within 12 n (C4) hange w/in 12")
Depth (inchomments: DROLOGY Vetland Hydrol rimary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	ogy indicators (check ons (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3)	s sufficient) A/ Sur Inur Spa Mar Hyd	pply, measure from face Soil Cracks (B ndation Visible on A ursely Vegetatêd Co 1 Deposits (B15) frogen Sulfide Odo -Season Water Tal	m soll su 36) Aerial Ima oncave S r (C1) (w	agery (B7) Surface (B Vin 12")	Sec.	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquit	prs (at leas) Leaves (B10) pheres on I educed Iro soil color of (C5) essed Plan Position (D2 ard (D3)	t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") ts (D1)
Depth (inchomments: DROLOGY Vetland Hydrol rimary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3)	s sufficient) A/ Sur Inur Spa Mar Hyd	pply, measure from face Soil Cracks (B ndation Visible on A arsely Vegetatêd Co th Deposits (B15) drogen Sulfide Odo	m soll su 36) Aerial Ima oncave S r (C1) (w	agery (B7) Surface (B Vin 12")	Sec N 8)	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquit: (w/in 24*, can	prs (at leas) Leaves (B10) pheres on I educed Iro soil color ci (C5) essed Plan osition (D2 ard (D3) perch H20	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) thange w/in 12") ts (D1) (b) W/in 12")
Depth (inchromments: DROLOGY etland Hydrolimary Indicato Surface Wall High Water Saturation (Water Mark Sediment D Drift Deposi	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3)	s sufficient) A/ Sur Inur Spa Mar Hyd	pply, measure from face Soil Cracks (B ndation Visible on A ursely Vegetatêd Co 1 Deposits (B15) frogen Sulfide Odo -Season Water Tal	m soll su 36) Aerial Ima oncave S r (C1) (w	agery (B7) Surface (B Vin 12")	Sec AV	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24*, can	prs (at leas) Leaves (B10) pheres on I educed Iro soil color of (C5) essed Plan osition (D2 ard (D3) perch H20 phic Relief (t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") ts (D1)
Depth (inchiomments: DROLOGY etland Hydrol imary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4)	s sufficient) A Sur Inur Spa Mar Hyd V Dry Oth	pply, measure from face Soil Cracks (B ndation Visible on A ursely Vegetatêd Co 1 Deposits (B15) frogen Sulfide Odo -Season Water Tal	m soll su 36) Aerial Ima oncave S r (C1) (w	agery (B7) Surface (B Vin 12")	Sec AV	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24", can Microtopograp (FAC Neutral T	prs (at leas) Leaves (B10) pheres on I educed Iro soil color ci (C5) essed Plan Position (D2 ard (D3) perch H2C phic Relief (est (D5)	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) thange w/in 12") Its (D1) (b) (c) (c) (d) (c) (d) (c) (d) (c) (e)
Depth (inchiomments: DROLOGY etland Hydrolimary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposition	ogy indicators (check one (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4) s (B5)	Sufficient) A Sur Inur Spa Mar Hyd V Dry Oth	pply, measure from face Soil Cracks (B andation Visible on A arsely Vegetatêd Co al Deposits (B15) drogen Sulfide Odo Season Water Tal er (explain)	m soll su 36) Aerial Ima oncave S r (C1) (w ble (C2) (agery (B7) Surface (B Vin 12") (Win 24")	Sec AV	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24", can Microtopograp (FAC Neutral T	prs (at leas) Leaves (B10) pheres on I educed Iro soil color ci (C5) essed Plan Position (D2 ard (D3) perch H2C phic Relief (est (D5)	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) thange w/in 12") Its (D1) (b) (c) (c) (d) (c) (d) (c) (d) (c) (e)
Depth (inchiomments: DROLOGY etland Hydrolimary Indicato Surface Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi eld Observation	ogy indicators (check ons (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") Is (B1) Is (B3) Is (B3) Is (B4) Is (B5) Ins (in, from ground surfatesent? Yes	Sufficient) AV Sur Inui Spa Hyd V Dry Oth	pply, measure from face Soil Cracks (Endation Visible on Aursely Vegetatêd Crit Deposits (B15) Irogen Sulfide Odor-Season Water Taller (explain)	m soil su 36) Aerial Ima oncave S r (C1) (w ble (C2) (agery (B7) Surface (B Vin 12") (w/in 24")	Sec AV	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24", can Microtopograp (FAC Neutral T	prs (at leas) Leaves (B10) pheres on I educed Iro soil color ci (C5) essed Plan Position (D2 ard (D3) perch H2C phic Relief (est (D5)	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) change w/in 12") Its (D1) (b) (c) (b) (c) (c) (c) (d) (c) (d) (c)
Depth (inchorments: DROLOGY etland Hydroly imary Indicato Surface Water Saturation (Water Mark Sediment D Drift Deposition Algal Mat or iron Deposition	ogy indicators (check ons (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") Is (B1) Is (B3) Is (B4) Is (B5) Ins (in. from ground surfatesent? Is yes Is sent? Is Yes Yes	Sufficient) AV Sur Inur Spa Mar Hyd V Dry Oth ace): No	pply, measure from face Soil Cracks (Bendation Visible on Aursely Vegetated Cotton Sulfide Odor-Season Water Taller (explain) Depth of water Depth to water	m soil su Aerial Ima oncave S r (C1) (w ble (C2) (agery (B7) Surface (B /in 12") (w/in 24")	Sec AV	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24", can Microtopograp (FAC Neutral T	prs (at leas) Leaves (B10) pheres on I educed Iro soil color ci (C5) essed Plan Position (D2 ard (D3) perch H2C phic Relief (est (D5)	t 2 are required) (9) Living Roots (C3) (within 12 or (C4) change w/in 12") Its (D1) (b) (c) (b) (c) (c) (c) (d) (c) (d) (c)
Depth (inchromments: DROLOGY Vetland Hydrol Finany Indicato Surface Water Mark Sediment D Drift Deposit Algal Mat or Iron Deposit Seld Observation Urface Water Felder Table President	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) ons (in. from ground surfateresent? Yes Seep	s sufficient) A Sur Inur Spa Mar Hyd V Dry Oth ace): No No Ding in at th	pply, measure from face Soil Cracks (Bendation Visible on Aursely Vegetated Cracks (B15) frogen Sulfide Odor-Season Water Taller (explain) Depth of wat Depth to wat at depth but not ye	m soil su 36) Aerial Ima oncave S r (C1) (w ble (C2) (der (in.) _ et filled?;	agery (B7) Surface (B /in 12") (w/in 24")	Sec	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquit: (w/in 24", can Microtopograp (# OBL+FACV	ors (at leas) Leaves (B10) pheres on I deduced Iro soil color of (C5) essed Plan Position (D2 and (D3) perch H20 phic Relief (est (D5) V dominants	t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") Its (D1) W/in 12") W/in 12") D w/in 12") > # FACU+UPL dominants)
Depth (inchromments: DROLOGY Vetland Hydrol Finary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Viron Deposi ield Observation urface Water Forest	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) ons (in. from ground surfatorsent? Yes eposit? Seepont? Yes	Sufficient) A Sur Inur Spa Mar Hyd Orh Oth No	pply, measure from face Soil Cracks (Bendation Visible on Aursely Vegetated Country (B15) frogen Sulfide Odor-Season Water Taller (explain) Depth of water to be possible to water to sate the water to sate water to water to sate water to sate water to water to sate water to water to sate water to water to water to sate water to water to sate water to w	m soil su 36) Aerial Ima oncave S r (C1) (w ble (C2) (ter (in.) _ ler (in.) _ t filled?: . (in.) _	agery (B7) Surface (B Vin 12") (w/in 24")	Sec	ondary Indicate Water-Stained Drainage Pate Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquite (w/in 24", can Microtopograp (FAC Neutral T	ors (at leas) Leaves (B10) pheres on I deduced Iro soil color of (C5) essed Plan Position (D2 and (D3) perch H20 phic Relief (est (D5) V dominants	t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") Its (D1) W/in 12") W/in 12") D w/in 12") > # FACU+UPL dominants)
Depth (inchromments: DROLOGY estland Hydrol imary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or iron Deposi eld Observatio urface Water F dater Table Presenctudes capilla	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) ors (in. from ground surfatorsent? Yes sent? Yes ry fringe)	s sufficient) A Sur Inur Spa Mar Hyd V Dry Oth ace): No bing in at th	pply, measure from face Soil Cracks (Endation Visible on Aursely Vegetated Colorsely Vegetated Colorsely Vegetated Colorsely Vater Taler (explain) Depth of wat Depth to wat at depth but not yet Endo	m soil su Aerial Ima oncave S r (C1) (w ble (C2) (ter (in.) _ ter (in.) _ thilled?: . (in.) _ Unkno	agery (B7) Surface (B Vin 12") (w/in 24")	Sec AV	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquita (w/in 24", can Microtopograp (# OBL+FACV	ors (at leas) Leaves (B10) pheres on I deduced Iro soil color of (C5) essed Plan Position (D2 and (D3) perch H20 phic Relief (est (D5) V dominants	t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") Its (D1) W/in 12") W/in 12") D w/in 12") > # FACU+UPL dominants)
Depth (inchromments: DROLOGY estland Hydrol imary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or iron Deposi eld Observatio urface Water F dater Table Presenctudes capilla	ogy indicators (check ors (any one indicator is ter (A1) Table (A2) (w/in 12") A3) (w/in 12") s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) ons (in. from ground surfatorsent? Yes eposit? Seepont? Yes	s sufficient) A Sur Inur Spa Mar Hyd V Dry Oth ace): No bing in at th	pply, measure from face Soil Cracks (Endation Visible on Aursely Vegetated Country (Endation Visible on Aursely Vegetated Country (Explain) Depth of war (Explain) Depth to war (Epi Endo	m soil su Aerial Ima oncave S r (C1) (w ble (C2) (ter (in.) _ ter (in.) _ thilled?: . (in.) _ Unkno	agery (B7) Surface (B Vin 12") (w/in 24")	Sec AV	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic P Shallow Aquita (w/in 24", can Microtopograp (# OBL+FACV	ors (at leas) Leaves (B10) pheres on I deduced Iro soil color of (C5) essed Plan Position (D2 and (D3) perch H20 phic Relief (est (D5) V dominants	t 2 are required) 9) Living Roots (C3) (within 12 n (C4) hange w/in 12") Its (D1) W/in 12") W/in 12") D w/in 12") > # FACU+UPL dominants)



Site 022: Soil. Photo taken July 22, 2018.



Site 022: Soil. Photo taken July 22, 2018.





Site 022: Northern view of vegetation. Photo taken July 22, 2018.



Site 022: Southern view of vegetation. Photo taken July 22, 2018.

at like About	3 Date: 7/77//8
D 1 = 0 = 1	Sampling Point #: 23
Applicant/Owner: DOT+ OF SC	
nvestigator(s): Mar. S. Milla D. Emily H. Firm: HD	
.at. (dec.*) 57.786475 Long152.84558 ± NAD 83 Recorded on	GPS# A Marked off map? A Freid Map
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landforn	m; 111/15/7/2 Stope (%); 977 Aspect: 5
ocal relief: Shape across şlope: linear / convex / concave Shape up/downslope: linear / co	nvex / concave Nvvi classification;
	Veg Type (Viereck Level 4 or other): Forb mead
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. HGM type:
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circum	nstances* present? Yes X No
Are Vegetation $\overline{\mathcal{N}}$, Soil $\overline{\mathcal{N}}$, or Hydrology $\overline{\mathcal{M}}$ naturally problematic? If needed, explain a	inswers 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 No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can	total >100%. Use 2012 indicator status. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	Must be of Daminent Species
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
1	Total Number of Dominant
2 6	Species Across All Strata: (B)
4. 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: 50 (A/B)
	Prevalence Index worksheet:
50% of total cover: 20% of total cover:	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	The state of the s
1. ROS NOUT F FACUT.	-
2. Ruhane 5 FACU 8.	75 225
3 9	119 100
4 10	FACU species X4= X4=
5	UPL + NL species X5=
6	Column Totals: 127 (A) 423 (B)
Total Sapting/Shrub Cover: 13	Prevalence Index = R/A = 3.33
50% of total cover: 6.5 20% of total cover: 2.6	Prevalence Index = B/A = 7. 7.
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
	Hydrophytic Vegetation Indicators:
3. Sol 100 10 + FACU 14.	Dominance Test is>50%
4. ANN Fel 50 V FAC 15.	Prevalence Index is ≤3.0
5. Sancan 5 = FACW16.	Morphological Adaptations¹ (Provide supporting
6. Gerery 5 - FACU 17.	data in Remarks or on a separate sheet)
7. The The B = Freu 18.	Problematic Hydrophytic Vegetation¹ (Explain)
8. Gol had 2 - FACU 19.	*
9. Ach mill 2 - FACU 20	¹ Indicators of hydric soil and wetland hydrology must
10. 2.2.2. 1. 4. 3.02. 4. 4.	be present unless disturbed or problematic.
Total Herb Cover:	
57 778	Hydrophytic
0	Vegetation Yes No X
Circular 1/10-ac plot _x or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes % (where applicable)	Present?
Remarks: Trace: Ely tra, fes rub car pac poa protengo fe	
tricer, poor are , lip noo , cas una, thy min,	Alaska Version 2.0 Modified by HDI
US Army Corps of Engineers Jer vie was made and the tor	- off arn cha ran unc

rofile Description:		oth nooded i	to document the	indicator or		ha aba-			Sampling Point #:
1000		pin needed	Sec. 19			ne abse	nce of indicato	ors)	
Depth Horizon	Soil Matrix	- +	Re	dox Feature	S	-		α,α dip.	
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u> <u>I</u>	vpe ^t	<u>Loc²</u>	Texture	(pos/ neg)	Remarks for use comment number
7-4 0:			6.3					- +	TO A TO
4-5 ASLI	10 KR711		Tage .	- 1-	-0		7-1		
2-7 Ash 2	1040/12			- 34		_	Fral		diceontinua
7-1 /15/13	1012612			- 12	-	1	96		1
1-14 Oab	TOPICALC					_			
1-22 14	7.54825/2				. 5 446	-	-5/1	-	127
Type: C = Concentra	7	RM = Redu	ced Matrix, CS=	Coated San	d Grains	² Locatio	on: PL = Pore	Lining, RC :	= Root Channel, M = Ma
ydric Soil Indicator									The state of the s
tandard Indicators:			Indicators fo			1			
Histosol or Histe sat'd during we	I (A1) (≥16"organic s	urface,	A Alaska		10.0		3On		of hydrophytic vegetation
sat'd during wi			A						icator of wetland an appropriate landscap
undertain by m	ineral soil with chroma	sat 0, ≤2)	/ Alaska	Alpine Swal	es (TA5)				e present unless disturbe
1/ Hydrogen Sulfide surface; @	e (A4) (within 12"of g	round	1 Alaska	Redox with	2.5Y Hu	e		roblematic. ve details of	color change in Remark
1 Thick Dark Surfa	ice (Ā12)			Gleyed with		5Y or Re	edder		
Alaska Gleyed (A13)			e.g., see p.91					
Alaska Redox (A				ement; explair		rks)			
∧ Alaska Gleyed P			The same of		1				
estrictive Layer (if pr	esent)		Drainage Cla	ss: W	0				.,,
Type:	nane	_	Soil Map Unit	Name:		Нус	iric Soil Pres	ent?	Yes No X
		1.0							7
OROLOGY	adlantas (sharla sa	Mark and							
'DROLOGY /etland Hydrology i			ly, measure fron	n soil surfa	ce):				2 are required)
'DROLOGY 'etland Hydrology li rimary Indicators (a	inv one indicator is s	sufficient)			Ce):	N	Water-Stained	Leaves (B9	
DROLOGY /etland Hydrology in rimary Indicators (a /_ Surface Water (A	inv one indicator is s	sufficient) Y Surface	e Soil Cracks (B	6)		A.	Water-Stained Orainage Patte	Leaves (B9 ems (B10) _)
DROLOGY etiand Hydrology in imary Indicators (a* _ Surface Water (A* _ High Water Table	inv one indicator is s I) (A2) (w/in 12")	Sufficient) Surfact Inunda	e Soil Cracks (Bo ation Visible on A	6) erial Imager	y (B7)	*	Water-Stained Orainage Patte	Leaves (B9 ems (B10) _ oheres on Li	ving Roots (C3) (within 12
DROLOGY Setland Hydrology in imary Indicators (A* Surface Water (A* High Water Table Saturation (A3) (w	inv one indicator is s I) (A2) (w/in 12")	Sufficient) Surface Inunda Sparse	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co	6) erial Imager	y (B7)	4-1-1	Water-Stained Drainage Patte Dxid'd Rhizosp Presence of Ro (pos. a,a or s	Leaves (B9 ems (B10) _ oheres on Li educed Iron soil color cha	ving Roots (C3) (within 12
DROLOGY etland Hydrology interpretation (A* Surface Water (A* High Water Table Saturation (A3) (wo	inv one indicator is s l) (A2) (w/in 12") //in 12")	Sufficient) Surfac Inunda Sparse Marl D	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co deposits (B15)	6) erial Imager ncave Surfa	y (B7) ace (B8)	4-1-	Water-Stained Orainage Patte Oxid'd Rhizosp Presence of Ro (pos. α,α or s Salt Deposits (Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color cha C5)	ving Roots (C3) (within 12 (C4) ange w/in 12")
DROLOGY Vetland Hydrology Infimary Indicators (A* Surface Water (A* High Water Table Saturation (A3) (w	iny one indicator is s i) (A2) (w/in 12") i/in 12") s (B2)	Sufficient) Surfact Inundati Sparse Marl D Hydrog	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co deposits (B15) gen Sulfide Odor	6) erial Imager ncave Surfa (C1) (w/in 1	y (B7) ace (B8) 2")	X-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. α,α or s Salt Deposits (Stunted or Stree	Leaves (B9 ems (B10) _ oheres on Li educed Iron soil color cha C5) essed Plants	ving Roots (C3) (within 12 (C4) ange w/in 12")
/DROLOGY /etland Hydrology in rimary Indicators (a Surface Water (A') High Water Table Saturation (A3) (w) Water Marks (B1) Sediment Deposits (B3)	ny one indicator is s 1) (A2) (w/in 12") //in 12") s (B2)	Surface Inunda Sparse Mari D Hydrog Dry-Se	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odor eason Water Tab	6) erial Imager ncave Surfa (C1) (w/in 1	y (B7) ace (B8) 2")	X + + + + + + + + + + + + + + + + + + +	Water-Stained Orainage Patte Oxid'd Rhizosp Presence of Ro (pos. α,α or s Salt Deposits (Leaves (89 ems (810) oheres on Lieduced Iron coil color character (C5) essed Plants osition (D2)	ving Roots (C3) (within 12 (C4) ange w/in 12")
/DROLOGY /etland Hydrology in rimary Indicators (a	iny one indicator is s (A2) (w/in 12") (/in 12") (B2) (B4)	Sufficient) Surfact Inundati Sparse Marl D Hydrog	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odor eason Water Tab	6) erial Imager ncave Surfa (C1) (w/in 1	y (B7) ace (B8) 2")	A	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can	Leaves (B9 ems (B10) _ pheres on Li educed Iron coil color cha (C5) essed Plants osition (D2) ard (D3) perch H2O	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12")
DROLOGY etland Hydrology in timary Indicators (a	iny one indicator is s (A2) (w/in 12") (/in 12") (B2) (B4)	Surface Inunda Sparse Mari D Hydrog Dry-Se	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odor eason Water Tab	6) erial Imager ncave Surfa (C1) (w/in 1	y (B7) ace (B8) 2")	X	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To	Leaves (B9) ems (B10) _ cheres on Li educed Iron coil color cha C5) essed Plants osition (D2) and (D3) perch H2O chic Relief (D est (D5)	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Vetland Hydrology in imary Indicators (a Surface Water (A^ High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5)	Inv one indicator is s I) (A2) (w/in 12") I/in 12") I/in 12") I/in (B2) (B4)	Sufficient) Surfact Inunda Sparse Marl D Hydrog Dry-Se Other	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co eposits (B15) gen Sulfide Odor eason Water Tab	6) erial Imager ncave Surfa (C1) (w/in 1	y (B7) ace (B8) 2")	X	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To	Leaves (B9) ems (B10) _ cheres on Li educed Iron coil color cha C5) essed Plants osition (D2) and (D3) perch H2O chic Relief (D est (D5)	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12")
DROLOGY retland Hydrology in timary Indicators (a Surface Water (A High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5)	iny one indicator is s (A2) (w/in 12") (in 12") s (B2) (B4)	Sufficient) Surfact Inunda Sparse Marl D Hydrog Dry-Se Other	ee Soil Cracks (Bo ation Visible on A ely Vegetated Co deposits (B15) gen Sulfide Odor eason Water Tab	6) erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in	y (B7) ace (B8) 2") 224")	X	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To	Leaves (B9) ems (B10) _ cheres on Li educed Iron coil color cha C5) essed Plants osition (D2) and (D3) perch H2O chic Relief (D est (D5)	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Setland Hydrology Internat Indicators Carlocal Water (A-1) High Water Table Saturation (A3) (water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Seld Observations (interface Water Present)	iny one indicator is s (A2) (w/in 12") (in 12") (B2) (B4)	Sufficient) Surfact Inunda Sparse Mari D Hydrog Dry-Se Other	ce Soil Cracks (Boation Visible on A lety Vegetated Co deposits (B15) gen Sulfide Odor leason Water Tab (explain)	6) erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in	y (B7) ace (B8) 2") 24")	X	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To	Leaves (B9) ems (B10) _ cheres on Li educed Iron coil color cha C5) essed Plants osition (D2) and (D3) perch H2O chic Relief (D est (D5)	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Vetland Hydrology Infimary Indicators (a Surface Water (A* High Water Table Saturation (A3) (w Water Marks (B1) Sediment Deposits Drift Deposits (B3)	inv one indicator is s (A2) (w/in 12") (in 12") s (B2) (B4) from ground surface Yes Yes	Sufficient) Surface Inunda Sparse Mari D Hydrog Dry-Se Other e	ce Soil Cracks (Boation Visible on A cely Vegetated Co deposits (B15) gen Sulfide Odor ceason Water Tab (explain) Depth of water	erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in	y (B7) ace (B8) 2") 24")	X	Nater-Stained Drainage Patte Dxid'd Rhizosp Presence of Ri (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic Pi Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To	Leaves (B9) ems (B10) _ cheres on Li educed Iron coil color cha C5) essed Plants osition (D2) and (D3) perch H2O chic Relief (D est (D5)	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Vetland Hydrology Internation Indicators (as Surface Water (Arthugh Water Table Saturation (A3) (wow Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) and Observations (interface Water Present Present?	inv one indicator is s (A2) (w/in 12") (in 12") s (B2) (B4) from ground surface Yes Yes	Sufficient) Surface Inunda Sparse Mari D Hydrog Dry-Se Other e	ce Soil Cracks (Boation Visible on A cely Vegetated Co deposits (B15) gen Sulfide Odor deason Water Tab (explain)	erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in er (in.)	y (B7) ace (B8) 2") 1 24")	# 1	Vater-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. a.a. or s Salt Deposits (Stunted or Stre Geomorphic Pe Shallow Aquita (w/in 24", can Microtopograpi FAC Neutral To (# OBL+FACW	Leaves (B9) ems (B10) pheres on Li educed Iron soil color cha (C5) essed Plants osition (D2) and (D3) perch H2O (hic Relief (D est (D5) dominants >	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Vetland Hydrology Internation Indicators (a Surface Water (A High Water Table Saturation (A3) (w. Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) eld Observations (interface Water Present ater Table Present?	inv one indicator is s (A2) (w/in 12") (in 12") (B4) from ground surfact Yes Yes Yes Yes (P)	Sufficient) Surfact Inunda Sparse Marl D Hydrog Dry-Se Other No	ce Soil Cracks (Boation Visible on A cely Vegetated Coordinated Co	erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in er (in.) er (in.) (in.) Unknown	y (B7) ace (B8) 2") 1 24")	Wetli	Vater-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. a.a or s Salt Deposits (Stunted or Stre Seomorphic Pe Shallow Aquita (w/in 24", can Alcrotopograpi FAC Neutral To (# OBL+FACW	Leaves (B9) ems (B10) pheres on Li educed Iron soil color cha (C5) essed Plants osition (D2) and (D3) perch H2O (hic Relief (D est (D5) dominants >	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY etland Hydrology in imary Indicators (a	inv one indicator is s (A2) (w/in 12") (in 12") (B4) from ground surfact Yes Yes Yes Yes (P)	Sufficient) Surfact Inunda Sparse Marl D Hydrog Dry-Se Other No	ce Soil Cracks (Boation Visible on A cely Vegetated Coordinated Co	erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in er (in.) er (in.) (in.) Unknown	y (B7) ace (B8) 2") 1 24")	Wetli	Vater-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. a.a or s Salt Deposits (Stunted or Stre Seomorphic Pe Shallow Aquita (w/in 24", can Alcrotopograpi FAC Neutral To (# OBL+FACW	Leaves (B9) ems (B10) pheres on Li educed Iron soil color cha (C5) essed Plants osition (D2) and (D3) perch H2O (hic Relief (D est (D5) dominants >	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water)
DROLOGY Vetland Hydrology Internation Indicators (a Surface Water (A High Water Table Saturation (A3) (w. Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) eld Observations (in. urface Water Present ater Table Present?	inv one indicator is s (A2) (w/in 12") (in 12") (B4) from ground surfact Yes Yes Yes Yes (P)	Sufficient) Surfact Inunda Sparse Marl D Hydrog Dry-Se Other No	ce Soil Cracks (Boation Visible on A cely Vegetated Coordinated Co	erial Imager ncave Surfa (C1) (w/in 1 le (C2) (w/in er (in.) er (in.) (in.) Unknown	y (B7) ace (B8) 2") 1 24")	Wetli	Vater-Stained Drainage Patte Dxid'd Rhizosp Presence of Re (pos. a.a or s Salt Deposits (Stunted or Stre Seomorphic Pe Shallow Aquita (w/in 24", can Alcrotopograpi FAC Neutral To (# OBL+FACW	Leaves (B9) ems (B10) pheres on Li educed Iron soil color cha (C5) essed Plants osition (D2) and (D3) perch H2O (hic Relief (D est (D5) dominants >	ving Roots (C3) (within 12 (C4) ange w/in 12") (D1) w/in 12") 4) (caused by water) # FACU+UPL dominants)





Site 023: Soil. Photo taken July 22, 2018.



Site 023: Soil. Photo taken July 22, 2018.





Site 023: Eastern view of vegetation. Photo taken July 22, 2018.



Site 023: Western view of vegetation. Photo taken July 22, 2018.

WETLAND DETERMINATION DATA FORM – Alaska Region Borough/City:_ DOT+PF'SC Sampling Point #: Applicant/Owner:___ Mike Juff! Firm: HDR Alaska, Inc. Fmily Long. 152.86655 ± NAD 83 Recorded on GPS # _ Marked on map? X Field Map #: 4 Subregion (circle one): SE Southcentra Western Aleutian Interior Northern Landform: 5 maile Slope (%): _ C Aspect: Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear convex / concave NWI classification: 1551 / EM/C i Pad - Penny Camera #: ___ Veg Type (Viereck Level 4 or other): ___ Photo nos./descriptions: ____ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. Are Vegetation 1. Soil 1. or Hydrology 1 significantly disturbed? Are "Normal Circumstances" present? Yes X No _ Are Vegetation // Soil //, or Hydrology // naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area Hydric Soil Present? No within a wetland? Remarks (e.g., marginal?): Wetland Hydrology Present? Yes No VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status. Dominance Test worksheet: Tree Stratum (dbh≥ 3") Number of Dominant Species **Species** Cov % Dom? Ind. Cov.% Dom? Ind. Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: (B) Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 20% of total cover: 50% of total cover: Total % Cover of: Multiply by: Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. **OBL** species **FACW** species **FAC species** FACU species UPL + NL species Total Sapling/Shrub Cover: Prevalence Index = B/A = 20% of total cover: 50% of total cover: Herb Stratum Abs. Cov.% Dom? Abs.Cov.% Dom? 60 Hydrophytic Vegetation Indicators: X Dominance Test is>50% ➤ Prevalence Index is ≤3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 20% of total cover: 25 Hydrophytic 50% of total cover: Vegetation Circular 1/10-ac plot ___ or other plot dimension: Secande % of bare ground: Trace Present? % Total Cover of Bryophytes __/5 50 about (where applicable) seep u/ sedges. Plot contained to valley bottow 25' wide at pla Remarks: rue P. z sit (overhanging plot), Pub S/e, Des bor, Car Sis, Pol acu, Gal bor Gal tribidia, Plan Vitlata, Triour, Epicil, Lath pal, Sun can, Vio epip US Army Corps of Engineers

Irig Get Ceduc

OIL	1 10000	Falent C							Sampling Point #: 2
Profile Description	: (Describe to the dep	oth needed	to document the i	indicator or co	nfirm th	ne absei	nce of indicate	ors)	
Depth Horizon	Soil Matrix		Re	dox Features			- 1140	a,a dip.	100
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>% Tyr</u>	oe ¹	<u>Loc²</u>	<u>Texture</u>	(pos/ neg)	Remarks (or use comment number)
17 10:		Ξ,Ξ	14	= =					LI AT EXICIT
-19 De	24 8 8		- FI - 1		4				
-24 Ash	547/1		U W *		- 4	36c (F)	59	1/2	
	- 4		-			0		-	
			77	-	_ `	7		20 (Mar.)	
					_				Root Channel, M = Matr
	ors (check ones that	apply, mea		1 4				:	
tandard Indicator	E12: 0:	1	Indicators fo	r Problemati	c Hydri	ic Soils		- Indiantas a	e hada a hada
sat'd during	itel (A1) (≥16*organic s wet period of growing se ⊓ (A2) (8-16* organics,	ason)		Color Change	6		one	primary indi	f hydrophytic vegetation, cator of wetland an appropriate landscape
underlain by Hydrogen Sulfi	mineral soil with chroma ide (A4) (within 12"of g	≤2)		Alpine Swales Redox with 2.			or ;	problematic.	present unfess disturbe
surface; @ _ Thick Dark Sur	face (A12)	1	Alaska	Gleyed withou				ve details of	onor change in remains
Alaska Gleyed	(A13)		100		2007				1
Alaska Redox	•			e.g., see p.91 of ement; explain i		rks)			
Alaska Gleyed	Pores (A15)								
estrictive Layer (if	present)	11.5	Drainage Clas	ss. J					
Type: Depth (inches)	None		Soil Map Unit	Name:		Hyd	iric Soil Pres	ent?	/es_X No
DROLOGY				18 28					
	Indicators (check or		y, measure fron	n soil surfac	9):				are required)
	(any one indicator is		. Call Canalia (Di	01			Water-Stained		
≤Surface Water (.	A1) le (A2) (w/in 12")		ce Soil Cracks (Bi ation Visible on A		(D7)		Orainage Patt		ving Roots (C3) (within 12
≤ Saturation (A3)	(w/in 12")	Spars	ely Vegetated Co			'	Presence of R (pos. a,a or	educed Iron soil color cha	
_ Water Marks (B:			Deposits (B15)	1041 4 5 40			Salt Deposits		
_ Sediment Depos _ Drift Deposits (B			gen Sulfide Odor eason Water Tab				Stunted or Str		
_ Algal Mat or Cru		100	(explain)	ne (CZ) (Will a	.4)		Geomorphic F Shallow Aquita (w/in 24", can	ard (D3)	
∠Iron Deposits (B	35)				l, is		AC Neutral T	est (D5)	4) (caused by water)
ald Observations (i	in. from ground surfac	:e):		- All		T	A COLTENÇA	- donmidates >	# FACU+UPL dominants)
ırface Water Prese	ent? Yes 📐	No	Depth of water	er (in.) <u></u>	-				
ater Table Present		No	Depth to wate	er (in.)5					\
aturation Present? acludes capillary fri	YesX	No	Depth to sat.			Wetl	and Hydrolog	y Present?	Yes X No
<u> </u>	Data (stream gauge, r	nonitoring v			pections	s), if ava	ailable:	1	
		1		70	-				
emarks: Sups	upstran and	dung!	rem flow	my in.		3		1	
Just wive	Spot in se	ed W/	lots at a	al-sh	1		No. 1	-	4





Site 031: Soil. Photo taken July 23, 2018.



Site 031: Soil. Photo taken July 23, 2018.





Site 031: Southern view of vegetation. Photo taken July 23, 2018.



Site 031: Western view of vegetation. Photo taken July 23, 2018.

plicant/Owner: DOT+ PF SC Reg rm restigator(s): Mac S., Em.h. H., Mile Duffs Firm:	Sampling Point #: 3 Z
	HDR Alaska, Inc.
	on GPS #: X Marked on map? X Field Map #:
bregion (circle one): SE Spulincentral Western Aleutian Interior Northern Land	
cal relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	
	Veg Type (Viereck Level 4 or other):
e climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	
e Vegetation 1. Soil 4. or Hydrology 1. significantly disturbed? Are "Normal Circ	
e Vegetation M., Soil M., or Hydrology Maturally problematic? If needed, explain	n answers here.
JMMARY OF FINDINGS	1000
lydrophytic Vegetation Present? Yes 🔀 No Is the sampled at	rea
lydric Soil Present? Yes X No within a wetland	
Vetland Hydrology Present? Yes X No	Remarks (e.g., marginal?):
GETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % c	
ree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
5	That are OBL, FACW, or FAC:
6	Total Number of Dominant
7.	Species Across All Strata:
8	Percent of Dominant Species 1, 757
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
apling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
Sal hur 15 X FAC 7	OBL species X1= X1= Th
Publike 20 x FACU 8.	
9	FAC species
	FACU species X4=
	UPL + NL species X5=
	Column Totals: 123 (A) 386 (
Total Sapling/Shrub Cover: 35	2 491
50% of total cover: 7	Prevalence Index = B/A =
erb Stratum	
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	V C C C C C C C C C C C C C C C C C C C
Das har 5 PAC 12. Vio cp. 1 PAC	Hydrophytic Vegetation Indicators:
Sol len 50 - X FAC 13.	Dominance Test is>50%
Sana Can 15 FKW 15.	Prevalence Index is ≤3.0
Athere E EAC 16.	
Pol acm 2 PHC 17.	Morphological Adaptations (Provide support data in Remarks or on a separate sheet)
Cir ala 1 FACU18.	
Ara Gen 5 FREW 19.	Problematic Hydrophytic Vegetation ¹ (Explain
Foundly FAC 20.	
D. Orth sec 1 FALU 21.	¹ Indicators of hydric soil and wetland hydrology mu
Treeur 1 FRU 22.	be present unless disturbed or problematic.
Total Herb Cover: 92	
50% of total cover: 46 20% of total cover: 18.4	Hydrophytic
ircular 1/10-ac plot 🔀 or other plot dimension: % of bare ground:	Vegetation Yes No
Cover of Welland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
emarks: Glopes toward lake.	

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR

Frechnically Joes not most this induction because the is not with 12" of soil surface, thomever, the

presence of this at the Ashlorganic interface 813" as well as secondary indicators shows

that Saturation is topical at or above this level. The previous 3 weeks proof to freely

effort have been doner than normal.





Site 032: Soil. Photo taken July 23, 2018.



Site 032: Soil. Photo taken July 23, 2018.





Site 032: Eastern view of vegetation. Photo taken July 23, 2018.



Site 032: Western view of vegetation. Photo taken July 23, 2018.

10,000	KIB Date:
Applicant/Owner: NOT-IPF SC	Sampling Point #: 35
	Firm: HDR Alaska, Inc.
Lat. (dec.") 57.197245 Long152.190017 ± NAD 83 Reco	rded on GPS #: Marked on map? X Field Map #: 3
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern I	Landform: toe5luge Slope (%): Aspect:
Local relief: Shape across slope: (near / convex / concave Shape up/downslope: diff	read/ convex / concave NWI classification:
Photo nos /descriptions: Pad - Penny Camera #	#: X Veg Type (Viereck Level 4 or other): A F
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: λ N	lo: If no, explain. HGM type: Dlop
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal"	
Are Vegetation 🚣 Soil 🚣 or Hydrology ممر naturally problematic? If needed, e	explain answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sample	led area
Hydric Soil Present? Yes X No Within a we	etland? Yes X No
Wetland Hydrology Present? Yes X No No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover)	. % can total >100%. Use 2012 indicator status. Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom?	Ind. Number of Dominant Species
Species Cov.% Dom? Ind. Species Cov.% Dom? I	That are OBL, FACW, or FAC: (A)
2. Bet Ven 20 X PACU 6.	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	Percent of Dominant Species
Total Tree Cover: 25	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 12.5 20% of total cover: 5	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 <u>27</u> x1= <u>27</u>
1. PHn Sin 10 × EAC 7	FACW species 36 x2= 72
2.44 Ad 2 _ FIW8	FAC species 65 x3= 195
3. Mar cal 5 × OBL 9.	FACU species 25 X4= 100
5. 11	UPL + NL species X5= X5=
6	— Column Totals: 153 (A) 394 (B)
11	Coldini rotals. 222(7)
3 4	Prevalence index = B/A = 2.58
30% of total cover	Prevalence index - b/A =
Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom?	Ind.
1. Cal Can 30 X FAC12	Hydrophytic Vegetation Indicators:
2. Par lun 10 (10L-13.	
3.7. r lim 10 6BL 14.	Dominance Test is>50% ✓ Prevalence Index is ≤3.0
4. Car dis FW 15	
5. Des her 5 FAC 16	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
6. FALL AND 20 X FAC 17	
8. Com yal 2 0136 19.	Problematic Hydrophytic Vegetation ¹ (Explain)
9. Rub tha 9 Fh) 20.	
10 4 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover:	
50% of total cover: 55.5 20% of total cover: 22.2	Hydrophytic /
Circular 1/10-ac plot \times or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes 75 % Total Cover of Bryophytes 9 (2) (where applicable)	Vegetation Yes No
Remarks: Trave water, spi ste Car can, ph dil a yal tri tri eur, vio epi, lyc ann, ept. pal	y sen, the ans, sol lep, pyr asu, vio lang, the tem, Lis cor
	Alaska Version 2.0 Modified by HDR





Site 035: Soil. Photo taken July 23, 2018.



Site 035: Soil. Photo taken July 23, 2018.





Site 035: Northern view of vegetation. Photo taken July 23, 2018.



Site 035: Southern view of vegetation. Photo taken July 23, 2018.

WETLAND DETERMINATION DATA FORM - Alaska Region

	Project: Port from Airport	Borough/City:KI	
Selection Sele	Applicant/Owner: DOT+PF 36		Sampling Point #:
Subregion (circle one): SE Sentificantian Western Aleutian Interior Northern Landform: Settings stope (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compar) concave Stape up/downstope: linear / portifior / compared (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compar) compared (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape across stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape across releft: Shape	nvestigator(s): MS, EI+, MD	Firm	HDR Alaska, Inc.
Subregion (circle one): SE Sentificantian Western Aleutian Interior Northern Landform: Settings stope (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compar) concave Stape up/downstope: linear / portifior / compared (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compar) compared (%): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape percess stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape across stope (mear / compared (%)): 3 Aspect: Sec. coal releft: Shape across releft: Shape	.at. (dec.°) 57.886757 Long152.8:	39706±' NAD 83 Recorded	on GPS #: _X Marked on map? _X Field Map #: _3
Shape upridownshope: linear / portigist / concave Shape upridownshope: linear / concave concave concave concave concav	Subregion (circle one): SE Southcentral Western Ale	eutian Interior Northern Land	form: Slope (%): 3 Aspect: 5
Camera st.	ocal relief: Shape across slope; linear / convex! concav	e Shape up/downslope: linear	ponyex / concave NWI classification:
More climatic / hydrologic conditions on the site typical for this time of year? Yes:		Camera #:	veg Type (Viereck Level 4 or other):OSS F
Are Vegetation Soil Are Hydrology Are Informal Circumstances' present? Yes X No			
	Are Vegetation 1. Soil 1., or Hydrology 12 signific	antly disturbed? Are "Normal Cir	cumstances" present? Yes _X No
SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes	Are Vegetation 1/2. Soil 1/2. or Hydrology 1/2 natural	ly problematic? If needed, expla	in answers here.
Hydrophytic Vegetation Present? Yes			
Hydric Soil Present? Yes		No X	
Wetland Hydrology Present? Yes No Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total > 100%. Use 2012 indicator status. Tree Stratum (dbh≥ 3') Species Cov.% Dom? Ind. Dominance Test worksheet: 1. P.C. 21			d? Yes No X
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 Indicator status. Tree Stratum (dbb2 3') Species Cov. % Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC. CAP		2.0	The state of the s
Dominance Test Worksheet: Species Cov.% Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC: (A)			can total >100%. Use 2012 indicator status.
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Total Number of Dominant Species That are OBL, FACW, or FAC: (A)	VEGETATION (Use scientific flames.) Estimate absolut	e 70 COVER (HOL PERBURE COVER). 70	Dominance Test worksheet:
That are OBL, FACW, or FAC:		One N. Dawie Lad	Alumbar of Dominant Species
2			
Species Across All Strata: CF (B)		The state of the s	Total Number of Dominant
A			1
Total Tree Cover: 20	4. 8		
Solitor Sapiling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind.	Total Tree Cover:	30	
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. FACW species O	15		
Abs.Cov.% Dom? Ind. Abs.Cov.	5070 01 10101 001011	/% of total cover:	Total % Cover of: Multiply by:
1.		Ahs Cov % Dom? Ind	
2 00 hor 30	A .		OBL species XI=
Section Sect			7 31
5	1 4 4		
12. Column Totals: 127 (A) 501 (B)	4		_ FACU species X4= X4= X4=
Total Sapling/Shrub Cover: 10 50% of total cover: 20 20% of total cover: 6 Prevalence Index = B/A = 3.9 1.5			
Herb Stratum	6 12		- Column Totals: 127 (A) 501 (B)
Herb Stratum	Total Sapling/Shrub Cover:	40	2011
Herb Stratum	50% of total cover: 20 20	0% of total cover: 5	Prevalence Index = B/A = 3.9 +
1. Fes (Mh			
2			
3. Dry exp 25			Hydrophytic Vegetation Indicators:
4.			Dominance Test is>50%
5			Prevalence Index is ≤3.0
6.			Mambalagical Adaptations (Provide supporting
7			data in Remarks or on a separate sheet)
8			Problematic Hydrophytic Vegetation ¹ (Explain)
9			Plobelialic Hydrophylic Vegetation (Explain)
he present unless disturbed or problematic			
11 De present unless disturbed of problematic.			
			be present unless disturbed of problematic.
Total Herb Cover: 5+		5t	
50% of total cover: 28.5 20% of total cover: Hydrophytic	50% of total cover: 28.5 2	0% of total cover:	
Circular 1/10-ac plot X or other plot dimension: % of bare ground: 0 vegetation present?	Circular 1/10-ac plot X or other plot dimension:	% of bare ground:	1.080
% Cover of Wetland Bryophytes	% Cover of Wetland Bryophytes% Total	al Cover of Bryophytes	%
(where applicable)	(where applicable)	an Barry Ital and A	when our play the feel the sure.
Remarks: Trace: Vybedy, Cal can, her max, lycam, the angle is alpithtel, to eur,	remains. Trace: Und edu Cal can	א מומים	المعرفي المالي المالي ومالي المالي
The Cotal Man Man har all hear	PLO COLA MON MAI ! bis	W. 1	

US Army Corps of Engineers

Alaska Version 2.0 Modified by HD

OIL				76.71					Sampling Point #: 37
Profile Description: (Desc	ribe to the dep	pth neede	d to document the	indicato	r or confirm	the abse	nce of indicat	ors)	
Depth Horizon	Redox Features					a,a dip.			
(in.) (opt.) Col	or (moist)	%	Color (moist)	Color (moist) % Type¹ L			Texture	(pos/ neg)	Remarks (or use comment number
5-6 0,								iledi	(O) 039 CONTINENT HUNDING
-8 Azhl 2.1	577/1					_	FSal		
7-11 Axh2 7	5405/4				-		Fool		
10	U11/2	90							
1-15 Ash 3 7.5	YR511.	10	5		-0		50		
5-17 Och	7 1-3/10	-						_	
	HR25/2	-				_	51		
Type: C = Concentration, I	D = Depletion,	RM = Re	duced Matrix, CS=	Coated	Sand Grain	s ² Locatio	on: PL = Pore	Lining, RC	= Root Channel, M = Mat
lydric Soil Indicators (ch	eck ones that	apply, me	asure from top of	minera	ıl layers ur	iless oth	erwise noted):	
Standard Indicators:			Indicators fo	or Probi	ematic Hy	dric Soils	i ³ :		
A Histosol or Histel (A1)			A Alaska	Color C	hange ⁴ (TA	4)			of hydrophytic vegetation
sat'd during wet perio			20			,			dicator of wetland I an appropriate landscape
Histic Epipedon (A2) underlain by mineral	(8-16" organics, soil with chroma	, sata, i ≤2)	//_ Alaska	Alpine S	Swales (TA	5)	po	sition must l	be present unless disturbe
Hydrogen Sulfide (A4)	(within 12"of g	pround	A Alaska	Redox v	with 2.5Y H	ue		problematic ive details o	f color change in Remark:
Thick Dark Surface (A				Gleyed erlying L	without Hu	e 5Y or R	edder		11 -1
Naska Gleyed (A13)			_		p.91 of 2007				
Naska Redox (A14)					xplain in Ren				
A/41 1 61 15	(A4E)								
N Alaska Gleyed Pores	(A 10)				,				
	· · · · · · · · · · · · · · · · · · ·		Drainage Cla	ISS:	ud			141	
Restrictive Layer (if present	· · · · · · · · · · · · · · · · · · ·		Drainage Cla Soil Map Uni			Ну	dric Soil Pres	sent?	Yes NoX
Restrictive Layer (if present)						Ну	dric Soil Pres	sent?	Yes NoX
Restrictive Layer (if present Type:						Ну	dric Soil Pres	sent?	Yes No
Restrictive Layer (if present Type:						Ну	dric Soll Pres	sent?	Yes NoX
Restrictive Layer (if present) Type: Depth (inches) Comments:						Ну	dric Soll Pres	sent?	Yes NoX
Restrictive Layer (if present Type:						Ну	dric Soll Pres	sent?	YesNoX
Restrictive Layer (if present) Type: Depth (inches) Comments:	Hone	nes that a	Soil Map Uni	t Name:				¥	Ge Me 17
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica	Howe tors (check or		Soil Map Uni	t Name:		Sec	ondary Indical	ors (at leas	2 are required)
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica Primary Indicators (any or	Howe tors (check or	sufficient)	Soil Map Uni	t Name:		Sec	ondary Indical Water-Staine	ors (at leas	2 are required)
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica Primary Indicators (any or A/ Surface Water (A1)	tors (check or	sufficient)	pply, measure from	t Name: m soil s	urface):	Sec.	ondary Indical Water-Stained Drainage Pati	ors (at leas d Leaves (B lerns (B10)	2 are required)
Restrictive Layer (if present) Type: Depth (inches) Comments: YDROLOGY Vetland Hydrology Indica Primary Indicators (any or A Surface Water (A1) High Water Table (A2)	tors (check or ne indicator is:	sufficient) SurInu	pply, measure from face Soil Cracks (Endation Visible on A	m soil s 66) Aerial Im	urface): agery (B7)	Sec.	ondary Indical Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F	ors (at leas) d Leaves (B lerns (B10) spheres on t Reduced Iro	12 are required) 9) Living Roots (C3) (within 12 or (C4)
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica Primary Indicators (any or Al Surface Water (A1) Le High Water Table (A2) Saturation (A3) (w/in 12)	tors (check or ne indicator is:	sufficient) L Sur L Inu	pply, measure from the face Soil Cracks (Endation Visible on Aparsely Vegetated Co	m soil s 66) Aerial Im	urface): agery (B7)	Section No.	Ondary Indical Water-Stainer Drainage Pati Oxid d Rhizos Presence of F	ors (at leas) d Leaves (B 10) spheres on the Reduced Irons (B 10) spheres on the Reduced Irons (B 10)	(2 are required) 9) Living Roots (C3) (within 12
Restrictive Layer (if present) Type: Depth (inches) Comments: Primary Indicators (any or Al Surface Water (A1) High Water Table (A2) Water Marks (B1)	tors (check or ne indicator is:	Sufficient) L Sur L Inu Spa L Mai	pply, measure from face Soil Cracks (Endation Visible on Aparsely Vegetated Corl Deposits (B15)	m soil s 66) Aerial Im oncave S	urface): agery (B7) Surface (B8	Sec.	ondary Indical Water-Stainer Drainage Pati Oxid'd Rhizos Presence of F (pos. ɑ.ɑ or Salt Deposits	ors (at leas) d Leaves (B10) epheres on the Reduced Iron soil color cit (C5)	12 are required) 9) Living Roots (C3) (within 12 or (C4) nange w/in 12")
Restrictive Layer (if present) Type: Depth (inches) Comments: YDROLOGY Wetland Hydrology Indica Primary Indicators (any or A Surface Water (A1) High Water Table (A2) Saturation (A3) (w/in 12) Water Marks (B1) Sediment Deposits (B2)	tors (check or ne indicator is:	Sufficient) L Sur Inu Spa Mar	pply, measure from the face Soil Cracks (Endation Visible on American Vegetated Company (B15) drogen Sulfide Odo	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Secondary No.	ondary Indical Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St	ors (at leas) d Leaves (B derns (B10) spheres on t Reduced Iro soil color cl (C5) ressed Plan	2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12")
Restrictive Layer (if present) Type: Depth (inches) Comments: Property Verland Hydrology Indicators (any or Al Surface Water (A1) High Water Table (A2) Vater Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	tors (check or ne indicator is:	Sufficient) L Sur Inu Spa Mar	pply, measure from face Soil Cracks (Endation Visible on Aparsely Vegetated Corl Deposits (B15)	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Secondary No.	ondary Indical Water-Staine Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta	ors (at leasi d Leaves (B lerns (B10) spheres on I Reduced Iro soil color cl (C5) ressed Plan Position (D2	2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12")
Restrictive Layer (if present) Type: Depth (inches) Comments: Property Verland Hydrology Indicators (any or Al Surface Water (A1) High Water Table (A2) Vater Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	tors (check or ne indicator is:	Sufficient) L Sur Inu Spa Mai L Hyd Dry	pply, measure from the face Soil Cracks (Endation Visible on American Vegetated Company (B15) drogen Sulfide Odo	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Secondary No.	ondary Indical Water-Stainer Drainage Patt Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or St	d Leaves (B Leaves (B Leaves (B 10)) cheres on the Reduced Iron soil color city (C5) ressed Plan Position (D2 Lard (D3)	(2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)
Restrictive Layer (if present) Type: Depth (inches) Comments: Proposition (inches) Pro	tors (check or ne indicator is:	Sufficient) L Sur Inu Spa Mai L Hyd Dry	pply, measure from the face Soil Cracks (Endation Visible on Anasely Vegetated Corl Deposits (B15) drogen Sulfide Odor-Season Water Tal	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Sec. N.	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Stained Geomorphic I Shallow Aquif (w/in 24", car	ors (at leasi d Leaves (B lerns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 lard (D3) in perch H2C	(2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)
Restrictive Layer (if present) Type: Depth (inches) Comments: YDROLOGY Vetland Hydrology Indica Primary Indicators (any or M Surface Water (A1) High Water Table (A2) Water Marks (B1) Sediment Deposits (B2) U Drift Deposits (B3) Algal Mat or Crust (B4)	tors (check or ne indicator is:	Sufficient) L Sur Inu Spa Mai L Hyd Dry	pply, measure from the face Soil Cracks (Endation Visible on Anasely Vegetated Corl Deposits (B15) drogen Sulfide Odor-Season Water Tal	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Sec NAVA VAVA A	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leasi d Leaves (B derns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 ard (D3) in perch H2C phic Relief (Test (D5)	12 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)) w/in 12")
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. YDROLOGY Netland Hydrology Indica Primary Indicators (any or Al Surface Water (A1) High Water Table (A2) Vater Marks (B1) Vater Marks (B1) Vater Marks (B1) Vater Marks (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	tors (check or ne indicator is (w/in 12")	Sufficient) Sur Inu Spa Mai Hyd Dry Oth	pply, measure from the face Soil Cracks (Endation Visible on Anasely Vegetated Corl Deposits (B15) drogen Sulfide Odor-Season Water Tal	m soil s 36) Aerial Imoncave S	urface): aggery (B7) Surface (B8	Sec NAVA VAVA A	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leasi d Leaves (B derns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 ard (D3) in perch H2C phic Relief (Test (D5)	12 are required) 9) Living Roots (C3) (within 12 in (C4) mange w/in 12") ts (D1)) w/in 12") D4) (caused by water)
Restrictive Layer (if present) Type: Depth (inches) Comments: YDROLOGY Vetland Hydrology Indica Primary Indicators (any or My Surface Water (A1) High Water Table (A2) Water Marks (B1) Sediment Deposits (B2) Uprift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	tors (check or ne indicator is (w/in 12")	Sufficient) Sur Inu Spa Mai Hyd Dry Oth	Soil Map Uni pply, measure from face Soil Cracks (Endation Visible on A arsely Vegetated Co rl Deposits (B15) frogen Sulfide Odo -Season Water Tal er (explain)	m soil s Aerial Imponcave S r (C1) (wole (C2)	urface): lagery (B7) Surface (B8 w/in 12") (w/in 24")	Sec NAVA VAVA A	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leasi d Leaves (B lerns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 lard (D3) in perch H2C phic Relief (Test (D5)	12 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)) w/in 12") D4) (caused by water)
Restrictive Layer (if present) Type: Depth (inches) Comments: Property Vetland Hydrology Indicators (any or All Surface Water (A1) High Water Table (A2) Vater Marks (B1) Vater Marks (B1) Vater Marks (B3) Vater Marks (B3) Valuation (A3) (Win 12) Vater Marks (B3) Vater Marks (B4) Vater Marks (B5) Valuation (B4) Vater Marks (B5) Valuation (B5) Valuation (B5)	tors (check or ne indicator is : (w/in 12")	Sufficient) Sur Inu Spa Mai Hyd Oth	Soil Map Uni pply, measure from face Soil Cracks (Endation Visible on A arsely Vegetated Co rl Deposits (B15) frogen Sulfide Odo -Season Water Tal er (explain)	m soil s Aerial Imponcave S r (C1) (wole (C2)	urface): lagery (B7) Surface (B8 w/in 12") (w/in 24")	Sec NAVA VAVA A	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leasi d Leaves (B lerns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 lard (D3) in perch H2C phic Relief (Test (D5)	12 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)) w/in 12") D4) (caused by water)
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica Primary Indicators (any or Al Surface Water (A1) L High Water Table (A2) Vater Marks (B1) Vater Marks (B1) Vater Marks (B3) L Oprift Deposits (B2) Value Marks (B3) L Algal Mat or Crust (B4) Value Marks (B5) Value Marks (B5) Value Marks (B5)	tors (check or ne indicator is: (w/in 12") ground surfactor yes	Sufficient Sur Inu Spa Mai Hyd Dry Oth	pply, measure from the state of	m soil s Aerial Im Doncave ! T (C1) (w Dole (C2) er (in.) _ er (in.) _	urface): lagery (B7) Surface (B8 Win 12") (Win 24")	Sec NAVA VAVA A	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leasi d Leaves (B lerns (B10) spheres on I Reduced Iro soil color of (C5) ressed Plan Position (D2 lard (D3) in perch H2C phic Relief (Test (D5)	12 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") ts (D1)) w/in 12") D4) (caused by water)
Restrictive Layer (if present) Type: Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology Indica Primary Indicators (any or Al Surface Water (A1) Letter High Water Table (A2)	tors (check or ne indicator is: (w/in 12") ground surfactor yes	Sufficient Sur Inu Spa Mai Hyd Dry Oth	pply, measure from the state of	m soil s Aerial Imponcave s on (C1) (v ole (C2) er (in.) _ er (in.) _ t filled?:	urface): lagery (B7) Surface (B8 Win 12") (Win 24")	Section No.	ondary Indical Water-Stained Drainage Pate Oxid'd Rhizos Presence of F (pos. a.a or Salt Deposits Stunted or Sta Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral	ors (at leas) d Leaves (B terns (B10) pheres on the soil color of (C5) ressed Plan Position (D2) and (D3) pheres held (D5) who dominants	2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") Its (D1)) w/in 12") D4) (caused by water) > # FACU+UPL dominants)
Restrictive Layer (if present) Type: Depth (inches) Comments: Proposition (inches)	ground surface Yes Seepin Yes	Sufficient) Sur Inu Spa Mai Hyd Oth Ce): No 2 ng in at th	pply, measure from the face Soil Cracks (Endation Visible on Anasely Vegetated Control Deposits (B15) (frogen Sulfide Odor-Season Water Taller (explain) Depth of wal the face of the position of the position of the face (explain) Depth to walk the face of t	m soil s Aerial Imponcave S r (C1) (v ole (C2) er (in.) _ er (in.) _ Unkno	urface): aggery (B7) Surface (B8 v/in 12") (w/in 24")	Sec. N.	ondary Indical Water-Stained Drainage Pati Oxid'd Rhizos Presence of F (pos. α.α or Salt Deposits Stunted or Sti Geomorphic I Shallow Aquit (w/in 24", car Microtopogra FAC Neutral (# OBL+FACt	ors (at leas) d Leaves (B terns (B10) pheres on the soil color of (C5) ressed Plan Position (D2) and (D3) pheres held (D5) who dominants	2 are required) 9) Living Roots (C3) (within 12 n (C4) nange w/in 12") Its (D1)) w/in 12") D4) (caused by water) > #FACU+UPL dominants)





Site 037: Soil. Photo taken July 23, 2018.



Site 037: Soil. Photo taken July 23, 2018.





Site 037: Northern view of vegetation. Photo taken July 23, 2018.



Site 037: Southern view of vegetation. Photo taken July 23, 2018.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Pant Irms Arrant Borough/City KIB	Date: *7/23/18
Applicant/Owner DOT PF SC Recion	Sampling Point #:
A LA PALLAN	DR Alaska, Inc.
Lat. (dec.") 57 \$76066 Long152.541644 ± NAD 83 Recorded or	GPS #:Marked on map?K Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfor	m Slope (%): Aspect
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / co	onvex / concave NVVI classification: PFO 4/1/3
Photo nos./descriptions:Camera #:	Veg Type (Viereck Level 4 or other): OMF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain HGM type. Sope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circu	mstances" present? Yes X No
Are Vegetation	answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled are	a
Hydric Soil Present? Yes No within a wetland?	Yes X No
Wetland Hydrology Present? Yes X No	Remarks (e.g., marginal?).
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
1. Piz sit 25 × FU 5	That are OBL, FACW, or FAC:(A)
2. Ret Ken 5 _ FU 6	Total Number of Dominant Species Across All Strata: 5
3	Species Across Ali Strata: (B)
Total Tree Cover: 20	Percent of Dominant Species That are ORL FACW or FAC
16 00	That are OBL, FACW, or FAC. (A/B) Prevalence Index worksheet:
50% of total cover: 20% of total cover:	Total % Cover of: Multiply by:
Sapling/Shrub Stratum (woody plants < 3" dbh) , Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	02 02
1. Myr as 55 × OBL 7.	OBL species
2 Am s n 10 F 8.	FACW species X2= X2=
3 Sc her 2 _ F 9	FAC species 58 X3= 754
4. Salpul Z th 10	FACU species X4=
6. 12.	UPL + NL species X5=
	Column Totals: 241 (A) 623 (B)
12 %	Prevalence Index = B/A = 2.58
30 % of total cover	Prevalence Index = B/A =
Herb Stratum Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. (a) (a) 35 X F 12.	11. June 1. Ale Manadation Indicators
2. Car lun 15 × 086 13.	Hydrophytic Vegetation Indicators:
3. for lim 15 × 096 14.	Dominance Test is>50% Prevalence Index is ≤3.0
4. Des ber 1 F 15.	
5. (om na) 8	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
6. Francis IV F 17	
19.	Problematic Hydrophytic Vegetation¹ (Explain)
9 20	
10	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
11	be present unless disturbed or problematic.
Total Herb Cover: 84	
50% of total cover: 42 20% of total cover: 16.8	Hydrophytic Yes Y No
Circular 1/10-ac plot xor other plot dimension: % of bare ground;	Vegetation Yes Y No
% Cover of Wetland Bryophytes 25. % Total Cover of Bryophytes 65 % (where applicable)	
Remarks: Tare the for , Vac lut; vacc oxy, agr ala, v	DAGO AAC HALD
large pro low large out large and large death	

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR

Profile Description:					277			1945	Sampling Point # 38
	(Describe to the d	epth neede	d to document the	indicator	or confirm	the abse	nce of indicate	irs)	1 74.50
Depth Horizon	Soil Matrix	Κ	Re	dox Feat	tures			a,a dip.	
(in.) (opt.) 0-8 (2)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	(pos/ neg)	Remarks (or use comment number
9-9 H361	547/2						Fsal	<u>+</u>	
7-11 A3h2	104R712						F341	+	
1-12 Azh3	104R614					250	500	+	
2-14 Azh4	5V5/1	90	75HR614	10		RC	50	<u>+</u>	Photo I
1-24 Oeb				=		\equiv		100	
Type: C = Concentr	ation, D = Depletion	 n, RM = Re	luced Matrix, CS=	Coated S	 Sand Grain	s ² Locatio	n: PL = Pore	Lining, RC	= Root Channel, M = Mat
Hydric Soil Indicato									The same of the sa
Standard Indicators			Indicators fo					-	
Histosol or Histo	- el (A1) (≥16"organio ret period of growing s				nange ⁴ (TA		3Or		of hydrophytic vegetation, dicator of wetland
★ Histic Epipedon		s, sat'd,	Alaska	Alpine S	wales (TA	5)	hyd pos	rology, and ition must b	an appropriate landscape e present unless disturbe
Hydrogen Sulfic	le (A4) (within 12°o	ground	Alaska	Redox w	ith 2 5Y H	ue	or p	roblematic. ve details of	color change in Remarks
Thick Dark Surf	ace (A12)		Alaska Undo	Gleyed verlying La		5Y or Re	edder		
Alaska Gleyed	(A13)	100			.91 of 2007				
Alaska Redox (A14)				plain in Rem	arks)			4
Alaska Gleyed	Pores (A15)								
Restrictive Layer (if p	resent)		Drainage Cla	iss.	pà				
Type:	10N-C		Soil Map Uni	t Name:	-	Hyd	iric Soil Pres	ent?	Yes No
1.									
3. YDROLOGY Wetland Hydrology			ply, measure from	m soil sı	ırface):		indary Indicato		2 are required)
3. YDROLOGY Wetland Hydrology	any one indicator is	s sufficient)	ply, measure fro ace Soil Cracks (B		ırface):			Leaves (B9	9)
YDROLOGY Wetland Hydrology Primary Indicators (Surface Water (A High Water Table X Saturation (A3) (n	any one indicator is .1) e (A2) (w/in 12") w/in 12")	s sufficient) Surf Inum Spa	ace Soil Cracks (B dation Visible on A sely Vegetated Co	(6) Aerial Ima	agery (B7)		Water-Stained Drainage Patte Dxid'd Rhizosp Presence of R (pos. a,a or s	Leaves (B9 erns (B10) _ oheres on L educed Iron soil color ch	iving Roots (C3) (within 12
YDROLOGY Wetland Hydrology Primary Indicators (Surface Water (A High Water Table X Saturation (A3) (Water Marks (B1	any one indicator is 1) e (A2) (w/in 12") w/in 12")	s sufficient) Surf Inum Spa Mari	ace Soil Cracks (B dation Visible on A sely Vegetated Co Deposits (B15)	l6) Aerial Ima oncave S	agery (B7) Surface (B8		Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or s Salt Deposits (Leaves (B9 erns (B10) _ oheres on L educed Iron soil color ch (C5)	iving Roots (C3) (within 12 a (C4) ange w/in 12")
YDROLOGY Wetland Hydrology Primary Indicators (A Surface Water (A High Water Table X Saturation (A3) (a Water Marks (B1 Sediment Deposit	any one indicator is a (A2) (w/in 12") w/in 12") ts (B2)	s sufficient) Surficient Surficient Spa Mari	ace Soil Cracks (B dation Visible on A rsely Vegetated Co Deposits (B15) rogen Sulfide Odo	Aerial Ima Oncave S	agery (B7) Surface (B8 /in 12")		Water-Stained Drainage Patte Dxid'd Rhizos Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre	Leaves (B9 erns (B10) _ pheres on L educed Iron soil color ch (C5) essed Plant	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
YDROLOGY Wetland Hydrology Primary Indicators (Surface Water (A High Water Table Saturation (A3) (c) Water Marks (B1	any one indicator is 11) 2 (A2) (w/in 12") w/in 12")) ts (B2)	s sufficient) Surf Inum Spa Spa Mari X Hydi Dry-	ace Soil Cracks (B dation Visible on A sely Vegetated Co Deposits (B15)	Aerial Ima Oncave S	agery (B7) Surface (B8 /in 12")		Water-Stained Drainage Patte Dxid'd Rhizos Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita	Leaves (B10) _ cheres on L educed from soil color ch (C5) essed Plant osition (D2) ard (D3)	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
Wetiand Hydrology Primary Indicators (Surface Water (A High Water Table Saturation (A3) (Water Marks (B1 Sediment Deposits (B3)	any one indicator is 11) 2 (A2) (w/in 12") w/in 12") 1) ts (B2) 3) at (B4)	s sufficient) Surf Inum Spa Spa Mari X Hydi Dry-	ace Soil Cracks (B dation Visible on A sely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tal	Aerial Ima Oncave S	agery (B7) Surface (B8 /in 12")	- · · · · · · · · · · · · · · · · · · ·	Water-Stained Drainage Patte Dxid'd Rhizosy Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T	Leaves (B10) _ cheres on L educed Iron soil color ch (C5) essed Plant osition (D2) ard (D3) perch H2O hic Relief (I est (D5)	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") O4) (caused by water)
YDROLOGY Wetland Hydrology Primary Indicators (Surface Water (A High Water Table X Saturation (A3) (c Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus	any one indicator is (A2) (w/in 12") w/in 12") ts (B2) (B4) it (B4)	s sufficient) Surf Inun Spa Mari X Hyd Dry-	ace Soil Cracks (B dation Visible on A sely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tal	Aerial Ima Oncave S	agery (B7) Surface (B8 /in 12")	- · · · · · · · · · · · · · · · · · · ·	Water-Stained Drainage Patte Dxid'd Rhizosy Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T	Leaves (B10) _ cheres on L educed Iron soil color ch (C5) essed Plant osition (D2) ard (D3) perch H2O hic Relief (I est (D5)	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12")
YDROLOGY Wetiand Hydrology Primary Indicators (Surface Water (A High Water Table X Saturation (A3) (Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5	any one indicator is (A2) (w/in 12") (A2) (w/in 12") (A2) (w/in 12") (A3) (A4) (A4) (A5) (A5) (A6) (A6) (A6) (A7)	s sufficient) Surf Inun Spa Mari X Hydi Dry- Othe	ace Soil Cracks (B dation Visible on A rsely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tat er (explain)	Aerial Ima Aerial Ima Oncave S r (C1) (wo	agery (B7) Surface (B8 /in 12")	- · · · · · · · · · · · · · · · · · · ·	Water-Stained Drainage Patte Dxid'd Rhizosy Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T	Leaves (B10) _ cheres on L educed Iron soil color ch (C5) essed Plant osition (D2) ard (D3) perch H2O hic Relief (I est (D5)	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water)
YDROLOGY Wetland Hydrology Primary Indicators (Surface Water (A High Water Table X Saturation (A3) (i Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Field Observations (in	any one indicator is (A2) (w/in 12") (w/in 12") (ts (B2) (t) (t (B4) (t) (t) (t) (t) (t) (t) (t) (s sufficient) Surfi Inun Spa Mari X Hydi Dry- Othe	ace Soil Cracks (B dation Visible on A sely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tat er (explain)	Aerial Ima Aerial Ima Concave S r (C1) (wo	agery (B7) Surface (B8 /in 12") /w/in 24")	- · · · · · · · · · · · · · · · · · · ·	Water-Stained Drainage Patte Dxid'd Rhizosy Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T	Leaves (B10) _ cheres on L educed Iron soil color ch (C5) essed Plant osition (D2) ard (D3) perch H2O hic Relief (I est (D5)	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water)
High Water Table Saturation (A3) (Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus	any one indicator is (A2) (w/in 12") w/in 12") ts (B2) it (B4) it (B4) it Yes Yes Seep	s sufficient) Surf Inun Spa Mari X Hyd Dry- Othe	ace Soil Cracks (B dation Visible on A reely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tat er (explain) Depth of wat Depth to wat	Aerial Ima oncave S r (C1) (wo ole (C2) (er (in.) _ er (in.) _ t filled?: \(\frac{1}{2} \)	agery (B7) Surface (B8 /in 12") w/in 24")		Water-Stained Drainage Patte Dxid'd Rhizosy Presence of R (pos. a,a or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T (# OBL+FACW	Leaves (Bs ems (B10) _ oheres on L educed Iron soil color ch (C5) essed Plant osition (D2) and (D3) perch H2O hic Relief (I est (D5) / dominants	iving Roots (C3) (within 12's (C4) ange w/in 12") s (D1) w/in 12") O4) (caused by water) > #FACU+UPL dominants)
YDROLOGY Wetland Hydrology Primary Indicators Surface Water (A High Water Table X Saturation (A3) (c Water Marks (B1 Sediment Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Field Observations (in Surface Water Present	any one indicator is (A2) (w/in 12") (A2) (w/in 12") (A3) (A4) (A5) (A5) (A6) (A6) (A7) (A7) (A7) (A8) (A8) (A8) (A8) (A8) (A8) (A9) (A9)	s sufficient) Surf Inun Spa Mari X Hyd Dry- Othe	ace Soil Cracks (B dation Visible on A reely Vegetated Co Deposits (B15) rogen Sulfide Odo Season Water Tat er (explain) Depth of wat Depth to wat t depth but not ye Depth to sat. Epi Endo	er (in.) t filled?: Unknow	agery (B7) Surface (B8 /in 12") /w/in 24")	Wetl	Water-Stained Drainage Patte Dxid'd Rhizos; Presence of R (pos. o,o or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral T (# OBL+FACW	Leaves (Bs ems (B10) _ oheres on L educed Iron soil color ch (C5) essed Plant osition (D2) and (D3) perch H2O hic Relief (I est (D5) / dominants	iving Roots (C3) (within 12 to (C4) ange w/in 12") s (D1) w/in 12") O4) (caused by water) * FACU+UPL dominants)





Site 038: Soil. Photo taken July 23, 2018.



Site 038: Soil. Photo taken July 23, 2018.





Site 038: Northern view of vegetation. Photo taken July 23, 2018.



Site 038: Eastern view of vegetation. Photo taken July 23, 2018.

WETLAND DETERMINATION DATA FORM - Alaska Region

Applicant/Owner: DOT - DF SC	Date: 7/231//
	Sampling Point #. 39
Investigator(s): MS, EH, MD Firm	: HDR Alaska, Inc.
Lat. (dec.°) 57,886131 Long152,83 9813 ± NAD 83 Recorded	I on GPS #: X Marked on map? X Field Map # 3
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	form: Flat Slope (%): - Aspect
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear	
Photo nos /descriptions: Por Penny Camera #:_	Veg Type (Viereck Level 4 or other): FS I/I
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	If no, explain. HGM type: 5104
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Cir	rcumstances" present? Yes X No
Are Vegetation A. Soil N. or Hydrology Naturally problematic? If needed, explain	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes X No Is the sampled a within a wetlan.	
Wetland Hydrology Present? Yes X No No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % of	
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Species Cov,% Dom? Ind. Species Cov,% Dom? Ind.	Number of Demiserst Coasies
1 5 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
26	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:
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.	ar ar
1 7	OBL species
2	FACW species 0 X2= 0
3	FAC species X3=O
4	FACU speciesO X4=O
5	UPL + NL species X5=O
·	- Column Totals: 95 (A) 95 (B)
Total Sapling/Shrub Cover:	10
50% of total cover 20% of total cover	Prevalence Index = B/A =
Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind. 1. Coc Inn 95 X 0612.	
2 (on pa 5 066 13.	Hydrophytic Vegetation Indicators:
3 Jun aly 5 081 14.	✓ Dominance Test is>50%
4 15 7.	Prevalence Index is ≤3.0
5 16	Morphological Adaptations (Provide supporting
6	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8	
9	1 Indicators of builds and and and builds and
11	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 95	
112 = 10	thidesub do
Mariel	Hydrophytic Vegetation Yes No No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes _! \u03b2 %	Present?
(where applicable)	
(where applicable) Remarks: War 5%	
(where applicable)	agrala ele pal, tri ale cartes , gal tr.f. dan Alaska Version 2.0 Modified by HDR , gal tr.f. dan Noska Version 2.0 Modified by HDR

SOIL				Sampling Point #: 39			
Profile Description: (Describe to the depth ne	eded to document the indicator or confirm the	he absence of indicato	rs)				
Depth Horizon Soil Matrix	Redox Features	_	a,a dip				
(in.) (opt.) Color (moist) %	Color (moist) % Type¹	Loc ² Texture	(pos/ neg)	Remarks (or use comment number)			
0-5 0:			_				
5-11 Oe			+	Ash mixed into			
11-16 Ash SY6/1 90	7.5425/4 10 6	RC Fral	+				
¹Type: C = Concentration, D = Depletion, RM =	Reduced Matrix, CS=Coated Sand Grains	2Location: PL = Pore	Lining, RC	= Root Channel, M = Matrix			
Hydric Soil Indicators (check ones that apply			_	THE STATE OF THE S			
Standard Indicators:	Indicators for Problematic Hydr						
Histosol or Histel (A1) (≥16*organic surface	THE RESIDENCE OF THE PARTY OF T	30-	e indicator	of hydrophytic vegetation,			
sat'd during wet period of growing season)	Alaska Color Change ⁴ (TA4)			dicator of wetland			
Histic Epipedon (A2) (8-16* organics, sat'd, undertain by mineral soil with chroma ≤2)	Alaska Alplile Swales (TAS)	hyd pos	rology, and ition must b	an appropriate landscape be present unless disturbed			
Hydrogen Sulfide (A4) (within 12*of ground surface; @* in this pit	Alaska Redox with 2.5Y Hue	Give 1 4 Giv	roblematic /e details o	f color change in Remarks.			
Thick Dark Surface (A12)	Alaska Gleyed without Hue to Underlying Layer	5Y or Redder					
Alaska Gleyed (A13)	Other (e.g., see p.91 of 2007	1 11					
Alaska Redox (A14)	Supplement; explain in Remark	rks)					
Alaska Gleyed Pores (A15)	No. of the same		6 4				
Restrictive Layer (if present)	Drainage Class: VPU						
Type: None Depth (inches)	Soil Map Unit Name:	Hydric Soil Pres	ent?	Yes X No			
High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Presence of Re (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can Microtopograp FAC Neutral To	Leaves (B10) _ cheres on L educed Iror coil color ch C5) essed Plant osition (D2) rd (D3) perch H2O hic Relief (I est (D5)	iving Roots (C3) (within 12") n (C4) ange w/in 12") s (D1)			
Water Table Present? Seeping in a Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitor)	t that depth but not yet filled?: Depth to sat. (in.) Epi Endo Unknown pring well, aerial photos, previous inspections						
Iron sheen and depo	sits in water	rully is cove	ered a	l under			



Site 039: Soil. Photo taken July 23, 2018.



Site 039: Soil. Photo taken July 23, 2018.





Site 039: Northern view of vegetation. Photo taken July 23, 2018.



Site 039: Western view of vegetation. Photo taken July 23, 2018.

WETLAND DETERMINATION DATA FORM - Alaska Region

Project: Part Lions A	roort	Borough/City:	KTB	Date:
Applicant/Owner: DOT+PF	56			Sampling Point #: 40
nvestigator(s): MS, EH, MD)		Firm: HDR Alaska, Inc.	
at. (dec.") 57 19 0 3 43	Long152, \$38774	± NAD 83 Rec	corded on GPS #: X_ N	Narked on map? <u>/</u> Field Map #: <u>3</u>
Subregion (circle one): SE Southe	Mestern Aleutian	Interior Northern	Landform: Flat	Slope (%): Aspect;
ocal relief: Shape across slope: line	P/ convex / concave S	hape up/downslope:	inea / convex / concave	NWI classification:
Photo nos /descriptions:		Camera	#: X Veg Type (Vier	eck Level 4 or other): Blue with H
Are climatic / hydrologic conditions or				
Are Vegetation N, Soil N, or Hyd	drology // significantly of	listurbed? Are "Non	nal Circumstances" prese	ent? Yes X No
re Vegetation, Soil , or Hyd				
SUMMARY OF FINDINGS	Mark Service	The state of the s		
Hydrophytic Vegetation Present?	Yes X No_	1.4		S SA
Hydric Soil Present?	Yes No	Is the same	pled area vetland? Yes	No X
Wetland Hydrology Present?	Yes No 5	< No.	Remarks (e.	g., marginal?):
/EGETATION (Use scientific name		over (not relative cover	er). % can total >100%. U	se 2012 indicator status.
PEGETATION (Ose scientific filant	:5.) Lournage absolute 70 C	3101 (110t 10121110 0011	Dominance To	est worksheet:
Tree Stratum (dbh≥ 3")	Ind. Species	Cov.% Dom?	Ind. Number of Do	minant Species
Species Cov.% Dom?	ina. Species 5.			FACW, or FAC:(A)
2	6		Total Number	of Dominant
3.	7	The state of the s	Species Acros	s Ali Strata: (B)
4	8	-	- Baronst of Day	minant Species
To	otal Tree Cover:			FACW, or FAC: (A/B)
50% of total cover:	20% of !	otal cover:	Prevalence In	dex worksheet:
Sapling/Shrub Stratum (woody plan			Total '	% Cover of Multiply by:
Abs.Cov.% Dom?		Abs.Cov.% Dom?	Ind. OBL species	X1= -
1	7		FACW specie	ao x2= 40
2	8		FAC species	70 x3= 210
3	9		FACU species	7110
4	10		UPL + NL spe	
5	11		Column Totals	105
		11-	Coldini Total	
	ng/Shrub Cover:		Description	e Index = B/A = 3.12
50% of total cover:	20% or	total cover:	Prevalenc	e liloex - B/A =
Herb Stratum Abs.Cov.% Dom?	Ind.	Abs. Cov.% Dom?	Ind.	
1. Calcan 65 X	F 12.		- //	Vegetation Indicators:
2. Cha ana 10	FU- 13.	100	7.0	
3. Fes My 3	F 14.	<u> </u>		ance Test is>50% ence Index is ≤3.0
4. Des ber 2	15			
5. Co hor 2	FU 16.		- Morpho	ological Adaptations ¹ (Provide supporting in Remarks or on a separate sheet)
6. <u>Sol lep 20</u>	FW 18.			
8. San Can 15	FW 19.	Te.	Proble	matic Hydrophytic Vegetation ¹ (Explain)
9. Achmill 2	FU 20.	-	100	
10. To eur 1	FV- 21.	war Edition	Indicators of	hydric soil and wetland hydrology must less disturbed or problematic.
11	22	Asia di Santa di Sant	be present ur	siess disturbed of problematic.
	otal Herb Cover: 125			-
50% of total cover:	62.5 20% of	total cover: 25	Hydrophytic	Yes X
Circular 1/10-ac plot X or other	plot dimension:	% of bare ground:	O Vegetation Present?	162 NO
% Cover of Wetland Bryophytes (where applicable)		er of Bryophytes	%	
Remarks: Truce: Ros noo Her max, st	Inz mul I an	ther, car	mac any gen ,	any luc, lat pal
	T 71/1 #			

Phone Phone Phone and the Allerton Alberton and the second		6		THE WORLD		at an a		Sampling F	oint #: 40
Profile Description: (Describe	to the depth need	ded to document the	indicator	or confirm	the abse	nce of indicate	ors)	1/4	
Depth HorizonS	ioil Matrix	Re	dox Fea	tures			a,a dip.		
(in.) (opt.) Color (moist) %	Color (moist)	<u>%</u>	Type ¹	Loc2	Texture	(pos/ neg)		demarks Omment number)
2-5 0:	2 -						=	7,	FUER
5-7 Azhi 10427	7/1	400	-	- N		Fall		3	A CONTRACTOR
1-15 12h3 10m2	6/2	5/R5/4	5	<u>C</u>	BC	50		25% 10	YR6/3 A
	12.5/3			100		51	THE STATE OF	1	
Type: C = Concentration, D =	Depletion, RM = F	Reduced Matrix, CS=	Coated 5	Sand Grain	s ² Location	on: PL = Pore	Lining, RC	= Root Cha	nnel, M = Matr
Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A16) Alaska Gleyed Pores (A16) Alaska Gleyed Pores (A16) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed (A16) Alaska Gleyed Pores (A15) Alaska Gleyed (A16)	16"organic surface, growing season) 5" organics, sat'd, with chroma ≤2) rithin 12"of ground s pit	Alaska Alaska Alaska Alaska Und Other (Suppl	or Proble Color Cl Alpine S Redox v Gleyed v erlying L e.g., see p ement; ex	ematic Hydhange (TA Swales (TA with 2.5Y H without Hu	dric Solls 4) 5) ue e 5Y or R	3 ³ : One one hyc pos or _I 'Gi	ne indicator e primary in Irology, and ition must problematio	dicator of w I an appropr be present u	rtic vegetation, etland iate landscape inless disturbe ge in Remarks
1. 2		Soil Map Un	it Name:		Hy	dric Soll Pres	ent?	Yes	No
Depth (inches) Comments: 1.2. 2. 3. YDROLOGY					Ну	dric Soil Pres	ent?	Yes	No
Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology indicators	check ones that	apply, measure from		urface):	Sec	ondary Indicate	ors (at leas	2 are requi	No
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology Indicators Primary Indicators (any one in	check ones that	apply, measure fro	m soll sı	urface):	Sec	ondary Indicate Water-Stained	ors (at leas Leaves (B	2 are requi	No
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in	i (check ones that dicator is sufficier	apply, measure from	m soll sı		Sec.	ondary Indicate Water-Stained Drainage Patte	ors (at leas I Leaves (B erns (B10)	2 are requi	
Depth (inches) Comments: 12. 33. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12")	s (check ones that dicator is sufficier A S In 12")	apply, measure from ti) urface Soil Cracks (E undation Visible on A parsely Vegetated C	m soll si 86) Aerial Ima	agery (B7)	Sec.	ondary Indicate Water-Stained Drainage Patte	ors (at leas Leaves (B erns (B10) pheres on leduced Iro	2 are requi 9) iving Roots	(C3) (within 12°
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1)	i (check ones that dicator is sufficier 12")	apply, measure from ti) urface Soil Cracks (Bundation Visible on Aparsely Vegetated Coarl Deposits (B15)	m soil so 36) Aerial Ima oncave S	agery (B7) Surface (B8	Sec.	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R	ors (at leas Leaves (B erns (B10) pheres on l educed Iro soil color cl	2 are requi 9) iving Roots	(C3) (within 12°
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/ir Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2)	i (check ones that idicator is sufficier 12")	apply, measure from the control of t	m soil so 36) Aerial Imponcave S r (C1) (w	agery (B7) Surface (B8 v/in 12")	Sec.	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α,α or	ors (at leas Leaves (B erns (B10) pheres on l educed Iro soil color cl (C5)	2 are requi 9) Living Roots n (C4) nange w/in 1	(C3) (within 12°
Depth (inches) Comments: 12. 33. YDROLOGY Wetland Hydrology Indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/ir Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	s (check ones that idicator is sufficier 1. S 12") 1. In 1. S 1. H 1. H 1. D	apply, measure from apply, measure from the properties of the properties of the properties of the properties (B15) by drogen Sulfide Odo by Season Water Tal	m soil so 36) Aerial Imponcave S r (C1) (w	agery (B7) Surface (B8 v/in 12")	Section Av	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquite	prs (at leas) Leaves (Berns (B10) pheres on I educed Iro soil color of (C5) essed Plan rosition (D2 ard (D3)	2 are requi 9) Living Roots n (C4) nange w/in 1 ts (D1)	(C3) (within 12)
Depth (inches) Comments: 12. 33. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	s (check ones that idicator is sufficier 1. S 12") 1. In 1. S 1. H 1. H 1. D	apply, measure from the control of t	m soil so 36) Aerial Imponcave S r (C1) (w	agery (B7) Surface (B8 v/in 12")	Sec. AV	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquitt (w/in 24", can Microtopograp	ors (at leas) Leaves (B10) pheres on leduced Iro soil color of (C5) essed Plan Position (D2) ard (D3) perch H20 phic Relief (fest (D5)	2 are requi 9) Living Roots n (C4) nange w/in 1 ts (D1))) w/in 12") D4) (caused	(C3) (within 12' 2")
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	is (check ones that dicator is sufficient of the	apply, measure from apply, measure from the properties of the properties of the properties of the properties (B15) by drogen Sulfide Odo by Season Water Tal	m soil so 36) Aerial Imponcave S r (C1) (w	agery (B7) Surface (B8 v/in 12")	Sec. AV	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquitt (w/in 24", can Microtopograp	ors (at leas) Leaves (B10) pheres on leduced Iro soil color of (C5) essed Plan Position (D2) ard (D3) perch H20 phic Relief (fest (D5)	2 are requi 9) Living Roots n (C4) nange w/in 1 ts (D1))) w/in 12") D4) (caused	(C3) (within 12*
Depth (inches) Comments: 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/ir Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from gro	is (check ones that idicator is sufficier 12") 12") 10" 10" 10" 10" 10" 10" 10" 1	apply, measure from out) urface Soil Cracks (Bundation Visible on Apparsely Vegetated Coarl Deposits (B15) ydrogen Sulfide Odory-Season Water Tall	m soil si Rerial Im- poncave S r (C1) (w pole (C2) i	agery (B7) Surface (B8 v/in 12") (w/in 24")	Sec. AV	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquite (w/in 24", can Microtopograp	ors (at leas) Leaves (B10) pheres on leduced Iro soil color of (C5) essed Plan Position (D2) ard (D3) perch H20 phic Relief (fest (D5)	2 are requi 9) Living Roots n (C4) nange w/in 1 ts (D1))) w/in 12") D4) (caused	(C3) (within 12*2")
Depth (inches) Comments: 12. 33. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from groundscreen water Present?	is (check ones that idicator is sufficier LS S LY	apply, measure from the control of t	m soil si Aerial Ima oncave S r (C1) (w ble (C2) (er (in.) _ er (in.) _	agery (B7) Surface (B8 v/in 12") (w/in 24")	Sec. AV	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquite (w/in 24", can Microtopograp	ors (at leas) Leaves (B10) pheres on leduced Iro soil color of (C5) essed Plan Position (D2) ard (D3) perch H20 phic Relief (fest (D5)	2 are requi 9) Living Roots n (C4) nange w/in 1 ts (D1))) w/in 12") D4) (caused	(C3) (within 12*2")
Depth (inches) Comments: 12. 33. YDROLOGY Wetland Hydrology Indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from großurface Water Present? Vater Table Present?	i (check ones that dicator is sufficier 12°) M M M M M M O und surface): (es No _ (es No _ Seeping in at	apply, measure from th) urface Soil Cracks (Bundation Visible on Aparsely Vegetated Coarl Deposits (B15) ydrogen Sulfide Odory-Season Water Talkher (explain) Depth of wall Depth to wall that depth but not ye	m soil so Rerial Ima oncave S r (C1) (wole (C2) (er (in.) _ er (in.) _ t filled?;	agery (B7) Surface (B8 v/in 12") (w/in 24")	Sec. AV. AV. AV. AV. AV. AV. AV. AV. AV. AV	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α,α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquite (w/in 24", can Microtopograp FAC Neutral T (# OBL+FACV	ors (at leas) I Leaves (Berns (B10) pheres on I educed Iro soil color of (C5) essed Plan rosition (D2) perch H20 shic Relief (est (D5) V dominants	i 2 are requi 9) Living Roots n (C4) hange w/in 1 ts (D1)) W/in 12") D4) (caused > #FACU+L	(C3) (within 12*2*)
Depth (inches) Comments: 12. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Prift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground of the present? Vater Table Present? Yater Table Present? Yater Table Present?	is (check ones that idicator is sufficier LS S LY	apply, measure from the control of t	m soil st 36) Aerial Ima oncave S r (C1) (w ble (C2) t er (in.) _ er (in.) _ t filled?:	agery (B7) Surface (B8 v/in 12") (w/in 24")	Sec. AV. AV. AV. AV. AV. AV. AV. AV. AV. AV	ondary Indicate Water-Stained Drainage Patte Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquite (w/in 24", can Microtopograp	ors (at leas) I Leaves (Berns (B10) pheres on I educed Iro soil color of (C5) essed Plan rosition (D2) perch H20 shic Relief (est (D5) V dominants	i 2 are requi 9) Living Roots n (C4) hange w/in 1 ts (D1)) W/in 12") D4) (caused > #FACU+L	(C3) (within 12' 2")
Depth (inches) Comments: 2. 3. YDROLOGY Netland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground for the present? Vater Table Present? Yater Table Present? Yater Table Present? Yater Table Sequillary fringe)	i (check ones that dicator is sufficier 12') M M M M M M M M M M M M M M M M M M	apply, measure from apply, measure from the parset of Cracks (Bundation Visible on Aparsety Vegetated Cracks (B15) ydrogen Sulfide Odory-Season Water Talkher (explain) Depth of walk that depth but not yellow to sat Epi Endo	m soil si 36) Aerial Ima oncave S r (C1) (w ole (C2) (er (in.) _ er (in.) _ Unkno	agery (B7) Surface (B8 //in 12") (w/in 24")	Sec. AV. AV. AV. AV. AV. AV. AV. AV. AV. AV	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquitt (w/in 24", can Microtopograp FAC Neutral T (# OBL+FACV	ors (at leas) I Leaves (Berns (B10) pheres on I educed Iro soil color of (C5) essed Plan rosition (D2) perch H20 shic Relief (est (D5) V dominants	i 2 are requi 9) Living Roots n (C4) hange w/in 1 ts (D1)) W/in 12") D4) (caused > #FACU+L	(C3) (within 12' 2")
Depth (inches) Comments: 1. 2. 3. YDROLOGY Wetland Hydrology indicators Primary Indicators (any one in Surface Water (A1) High Water Table (A2) (w/in Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from großurface Water Present? Vater Table Present?	i (check ones that dicator is sufficier 12') M M M M M M M M M M M M M M M M M M	apply, measure from apply, measure from the parset of Cracks (Bundation Visible on Aparsety Vegetated Cracks (B15) ydrogen Sulfide Odory-Season Water Talkher (explain) Depth of walk that depth but not yellow to sat Epi Endo	m soil si 36) Aerial Ima oncave S r (C1) (w ole (C2) (er (in.) _ er (in.) _ Unkno	agery (B7) Surface (B8 //in 12") (w/in 24")	Sec. AV. AV. AV. AV. AV. AV. AV. AV. AV. AV	ondary Indicate Water-Stained Drainage Patt Oxid'd Rhizos Presence of R (pos. α.α or Salt Deposits Stunted or Str Geomorphic F Shallow Aquitt (w/in 24", can Microtopograp FAC Neutral T (# OBL+FACV	ors (at leas) I Leaves (Berns (B10) pheres on I educed Iro soil color of (C5) essed Plan rosition (D2) perch H20 shic Relief (est (D5) V dominants	i 2 are requi 9) Living Roots n (C4) hange w/in 1 ts (D1)) W/in 12") D4) (caused > #FACU+L	(C3) (within 12' 2")





Site 040: Soil. Photo taken July 23, 2018.



Site 040: Soil. Photo taken July 23, 2018.





Site 040: Northern view of vegetation. Photo taken July 23, 2018.

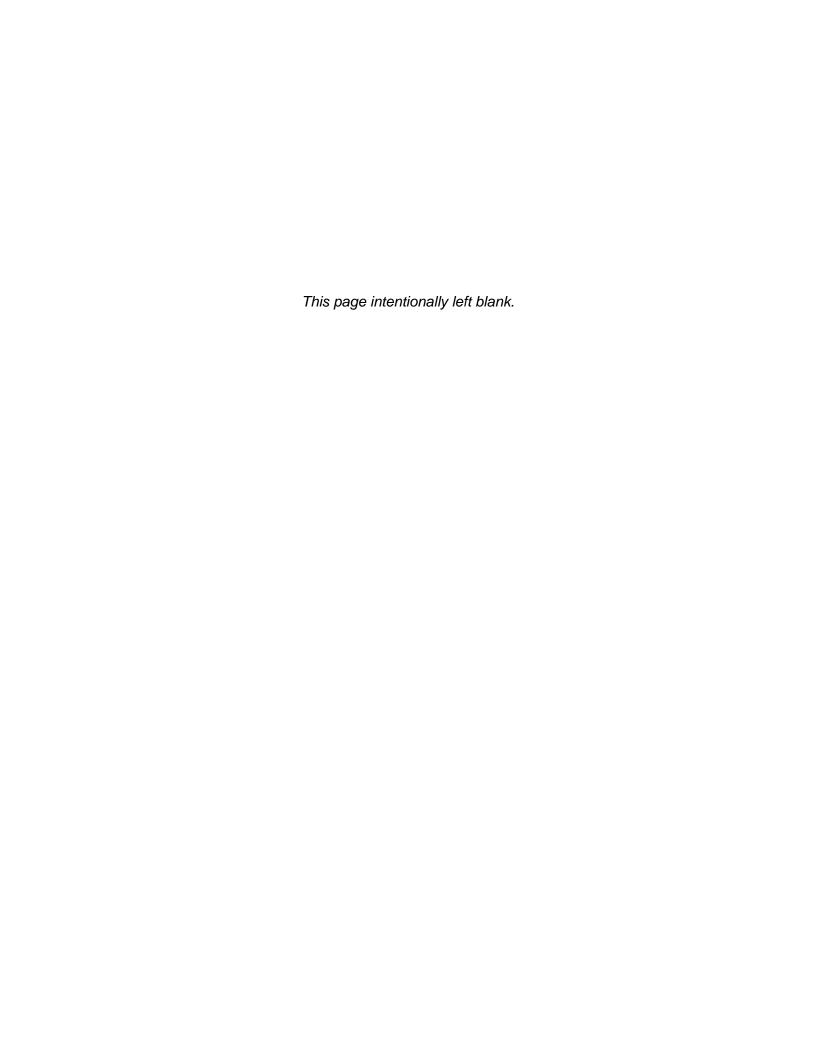


Site 040: Southern view of vegetation. Photo taken July 23, 2018.

Appendix B

Observation Point Photographs

May 7, July 19 and 22-24, 2018





Appendix B: Summary of Observation Point Sites

Site	Latitude	Longitude	NWI Code ^a	HGM Class ^b
002	57.88545	-152.84660	R4SBC	Riverine Channel
005	57.88553	-152.84407	U	N/A
008	57.88541	-152.84090	R4SBC	Riverine Channel
015	57.88644	-152.85124	R4SBC	Riverine Channel
017	57.88624	-152.85121	R4SBC	Riverine Channel
018	57.88609	-152.85091	U	N/A
019	57.88594	-152.85075	R4SBC	Riverine Channel
020	57.88545	-152.85028	R4SBC	Riverine Channel
024	57.88740	-152.84796	R4SBC	Riverine Channel
025	57.88168	-152.86043	R3UBH	Riverine Channel
026	57.88350	-152.86122	R4SBC	Riverine Channel
026b	57.88424	-152.86046	R4SBC	Riverine Channel
027	57.88442	-152.86046	R4SBC	Riverine Channel
028	57.88569	-152.85974	R4SBC	Riverine Channel
029	57.88640	-152.85921	R3UBH	Riverine Channel
030	57.88619	-152.85660	R4SBC	Riverine Channel
033	57.88826	-152.84120	R4SBC	Riverine Channel
034	57.88784	-152.83986	R4SBC	Riverine Channel
036	57.88704	-152.83987	R3UBH	Riverine Channel
041	57.88416	-152.85216	U	N/A
042	57.88416	-152.85034	U	N/A
558	57.88586	-152.84946	R4SBC	Riverine Channel
559	57.88644	-152.84977	R4SBC	Riverine Channel
560	57.88678	-152.85002	R4SBC	Riverine Channel
561	57.88702	-152.84991	R4SBC	Riverine Channel
561b	57.88912	-152.84874	U	N/A
562	57.88893	-152.84958	R4SBC	Riverine Channel
563	57.88906	-152.84924	R4SBC	Riverine Channel
564	57.88856	-152.85136	R4SBC	Riverine Channel
565	57.88825	-152.85215	R4SBC	Riverine Channel
566	57.88818	-152.85238	R4SBC	Riverine Channel
567	57.88794	-152.85227	R4SBC	Riverine Channel



Appendix B: Summary of Observation Point Sites

Site	Latitude	Longitude	NWI Code ^a	HGM Class ^b
568	57.88689	-152.85270	R4SBC	Riverine Channel
569	57.88683	-152.85273	R4SBC	Riverine Channel
570	57.88692	-152.85285	R4SBC	Riverine Channel
571	57.88656	-152.85235	R4SBC	Riverine Channel
573	57.88514	-152.85311	R4SBC	Riverine Channel
574	57.88451	-152.85355	R4SBC	Riverine Channel
575	57.88492	-152.85093	R4SBC	Riverine Channel
576	57.88511	-152.85044	U	N/A
579	57.88655	-152.85411	R3UBH	Riverine Channel
580	57.88677	-152.85470	R3UBH	Riverine Channel
585	57.89019	-152.85240	U	N/A
586	57.89036	-152.85570	R3UBH	Riverine Channel
587	57.88911	-152.85758	U	N/A
588	57.88802	-152.85591	R4SBC	Riverine Channel
590	57.88788	-152.85596	R4SBC	Riverine Channel
591	57.88571	-152.85449	R3UBH	Riverine Channel
592	57.88448	-152.85456	R3UBH	Riverine Channel
593	57.88341	-152.85398	R3UBH	Riverine Channel
594	57.88249	-152.85549	R3UBH	Riverine Channel
595	57.88238	-152.85673	R3UBH	Riverine Channel
596	57.88205	-152.85354	R1UBV	Riverine Channel
597	57.88276	-152.85280	R1UBV	Riverine Channel
598	57.88579	-152.83972	R3UBH	Riverine Channel
599	57.88554	-152.84606	R3UBH	Riverine Channel

^a NWI: National Wetlands Inventory. Cowardin et al. 1979. See Table 3 for full descriptions.

^b HGM: Hydrogeomorphic. Brinson 1993





Site 002: Upstream view of stream. Photo taken July 19, 2018.



Site 002: Downstream view of stream. Photo taken July 19, 2018.





Site 005: Northern view of vegetation. Photo taken July 19, 2018.



Site 005: Eastern view of vegetation. Photo taken July 19, 2018.





Site 008: Culvert outlet. Photo taken July 19, 2018.



Site 008: Downstream view of stream. Photo taken July 19, 2018.





Site 015: Upstream view of stream. Photo taken July 22, 2018.



Site 015: Top view of stream. Photo taken July 22, 2018.





Site 017: Upstream view of stream. Photo taken July 22, 2018.



Site 017: Downstream view of stream. Photo taken July 22, 2018.





Site 018: Soil. Photo taken July 22, 2018.



Site 018: Northern view of vegetation. Photo taken July 22, 2018.





Site 019: Upstream view of stream. Photo taken July 22, 2018.



Site 019: Downstream view of stream. Photo taken July 22, 2018.



Site 020: Upstream view of stream. Photo taken July 22, 2018.



Site 020: Downstream view of stream. Photo taken July 22, 2018.





Site 024: Upstream view of stream. Photo taken July 22, 2018.



Site 024: Downstream view of stream. Photo taken July 22, 2018.





Site 025: Upstream view of stream. Photo taken July 23, 2018.



Site 025: Downstream view of stream. Photo taken July 23, 2018.





Site 026: Upstream view of stream. Photo taken July 23, 2018.



Site 026: Downstream view of stream. Photo taken July 23, 2018.



Site 026b: Upstream view of stream. Photo taken July 23, 2018.



Site 026b: Downstream view of stream. Photo taken July 23, 2018.





Site 027: Upstream view of stream. Photo taken July 23, 2018.



Site 027: Downstream view of stream. Photo taken July 23, 2018.





Site 028: Upstream view of stream. Photo taken July 23, 2018.



Site 028: Downstream view of stream. Photo taken July 23, 2018.





Site 029: Upstream view of stream. Photo taken July 23, 2018.



Site 029: Downstream view of stream. Photo taken July 23, 2018.





Site 030: Upstream view of stream. Photo taken July 23, 2018.



Site 030: Downstream view of stream. Photo taken July 23, 2018.





Site 033: Upstream view of stream. Photo taken July 23, 2018.



Site 033: Downstream view of stream. Photo taken July 23, 2018.





Site 034: Upstream view of stream. Photo taken July 23, 2018.



Site 034: Downstream view of stream. Photo taken July 23, 2018.





Site 036: Upstream view of stream. Photo taken July 23, 2018.



Site 036: Downstream view of stream. Photo taken July 23, 2018.





Site 041: Culvert outlet. Photo taken July 24, 2018.



Site 041: Downstream view from culvert. Photo taken July 24, 2018.





Site 042: Eastern view of vegetation. Photo taken July 24, 2018.



Site 042: Southern view of vegetation. Photo taken July 24, 2018.





Site 558: Upstream view of stream. Photo taken May 7, 2018.



Site 558: Downstream view of stream. Photo taken May 7, 2018.





Site 559: Upstream view of stream. Photo taken May 7, 2018.



Site 559: Downstream view of stream. Photo taken May 7, 2018.





Site 560: Upstream view of stream. Photo taken May 7, 2018.



Site 560: Downstream view of stream. Photo taken May 7, 2018.





Site 561: Upstream view of stream. Photo taken May 7, 2018.



Site 561: Downstream view of stream. Photo taken May 7, 2018.





Site 561b: Soil. Photo taken May 7, 2018.



Site 561b: Vegetation. Photo taken May 7, 2018.





Site 562: Upstream view of stream. Photo taken May 7, 2018.



Site 562: Downstream view of stream. Photo taken May 7, 2018.





Site 564: Upstream view of stream. Photo taken May 7, 2018.



Site 564: Downstream view of stream. Photo taken May 7, 2018.





Site 565: Upstream view of stream. Photo taken May 7, 2018.



Site 565: Downstream view of stream. Photo taken May 7, 2018.





Site 566: Upstream view of stream. Photo taken May 7, 2018.



Site 566: Downstream view of stream. Photo taken May 7, 2018.





Site 568: Upstream view of stream. Photo taken May 7, 2018.



Site 568: Downstream view of stream. Photo taken May 7, 2018.





Site 570: Seep. Photo taken May 7, 2018.



Site 570: Downstream view of stream. Photo taken May 7, 2018.





Site 571: Upstream view of stream. Photo taken May 7, 2018.



Site 571: Downstream view of gravel fill. Photo taken May 7, 2018.





Site 573: Upstream view of stream. Photo taken May 7, 2018.



Site 573: Downstream view of stream. Photo taken May 7, 2018.





Site 574: Upstream view of stream to east. Photo taken May 7, 2018.



Site 574: Downstream view of stream to culvert inlet. Photo taken May 7, 2018.





Site 575: Upstream view of stream. Photo taken May 7, 2018.



Site 575: Downstream view of stream. Photo taken May 7, 2018.





Site 576: Eastern view of vegetation. Photo taken May 7, 2018.



Site 576: Western view of vegetation. Photo taken May 7, 2018.





Site 579: Upstream view of stream. Photo taken May 7, 2018.



Site 579: Downstream view of stream. Photo taken May 7, 2018.





Site 580: Upstream view of stream. Photo taken May 7, 2018.



Site 580: Downstream view of stream. Photo taken May 7, 2018.





Site 585: Southern view of vegetation. Photo taken May 7, 2018.



Site 585: Western view of vegetation. Photo taken May 7, 2018.





Site 586: Upstream view of stream. Photo taken May 7, 2018.



Site 586: Downstream view of stream. Photo taken May 7, 2018.





Site 587: Northern view of vegetation. Photo taken May 7, 2018.



Site 587: Eastern view of vegetation. Photo taken May 7, 2018.





Site 588: Upstream view of vegetation. Photo taken May 7, 2018.



Site 588: Downstream view of stream. Photo taken May 7, 2018.





Site 590: Upstream view of stream. Photo taken May 7, 2018.



Site 590: Downstream view of stream. Photo taken May 7, 2018.





Site 591: Upstream view of stream. Photo taken May 7, 2018.



Site 591: Downstream view of stream. Photo taken May 7, 2018.





Site 592: Upstream view of stream to west. Photo taken May 7, 2018.



Site 592: Downstream view of stream. Photo taken May 7, 2018.





Site 593: Upstream view of stream. Photo taken May 7, 2018.



Site 593: Downstream view of stream to culvert inlet. Photo taken May 7, 2018.



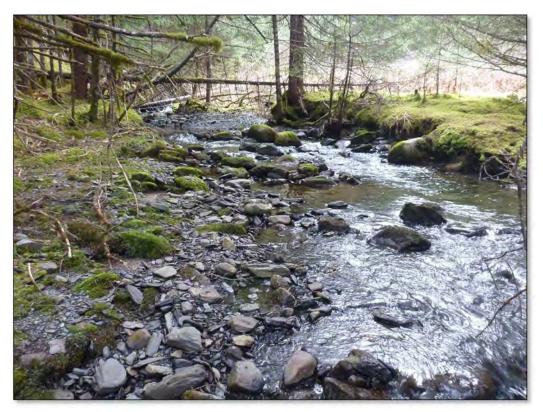


Site 594: Upstream view of stream. Photo taken May 7, 2018.



Site 594: Downstream view of stream to culvert inlet. Photo taken May 7, 2018.





Site 595: Upstream view of stream. Photo taken May 7, 2018.

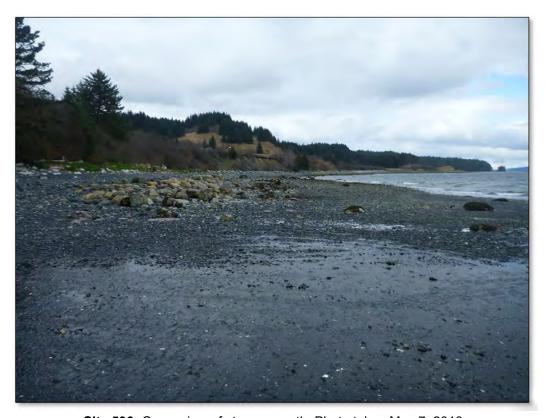


Site 595: Downstream view of stream. Photo taken May 7, 2018.





Site 596: Upstream view of stream. Photo taken May 7, 2018.



Site 596: Cross view of stream mouth. Photo taken May 7, 2018.





Site 597: Upstream view of stream. Photo taken May 7, 2018.



Site 597: Downstream view of stream mouth. Photo taken May 7, 2018.





Site 598: Upstream view of stream above culvert inlet. Photo taken May 7, 2018.



Site 598: Downstream view of stream mouth. Photo taken May 7, 2018.





Site 599: Upstream view of stream. Photo taken May 7, 2018.



Site 599: Downstream view of stream. Photo taken May 7, 2018.