Ambler Airport Improvements Project Ambler, Alaska

FINAL JURISDICTIONAL DETERMINATION REPORT

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Prepared for:



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Northern Region
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Table of Contents

Introduction and Purpose	1
Study Area	1
Methods	2
2005 Wetland Mapping Reevaluation	2
e	
•	
11	
Final Mapping	4
Results and Discussion	5
2005 Wetland Mapping Reevaluation	5
2.1 Wetland Indicators	7
Wetland Mapping	9
Jurisdictional Status	9
Wetland Habitat Types	11
Black Spruce Forest/Scrub-Shrub Wetland	11
Black Spruce Scrub-Shrub Wetland	11
<u> </u>	
Uplands	14
Habitat Type Summary	14
Wetland Functional Assessment	16
Categories of Wetland Function	17
Category I – High functioning wetlands	18
Category IV – Degraded and low functioning wetlands	19
Compensatory Mitigation	19
	1.2 2008 Mitigation Rule

Figures

Figure 1: Project Overview
Figure 2-9: Wetland Delineation

Figure 10-17: Wetland Functional Classification

Appendices

Appendix A: Wetland Determination Data Forms and Site Photos

Appendix B: Observation Point Photographs

1.0 Introduction and Purpose

The Alaska Department of Transportation and Public Facilities (DOT&PF) and the Federal Aviation Administration (FAA) are proposing to upgrade airport facilities at Ambler, Alaska to ensure safe and reliable air transportation that conforms to current FAA standards. The purpose of this report is to identify and describe wetlands in the vicinity of the existing Ambler Airport, the road approaching the airport, two potential material sites, and two alternative road corridors (Figure 1) that may be impacted by upgrades to the airport. The study area covered in this report encompasses approximately 1,002 acres.

This report describes the wetland delineation process as well as the extent, type, and functions of wetlands found in the study area that are preliminarily determined to be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under authority of Section 404 of the Clean Water Act or under authority of Section 10 of the Rivers and Harbors Act of 1899. By federal law (Clean Water Act) and associated policy, it is necessary to avoid project impacts to wetlands wherever practicable, minimize impact where impact is not avoidable, and in some cases mitigate for the impact.

Wetlands, waters of the U.S., and uplands (non-wetlands), as referenced in this report, are defined as:

<u>Wetlands</u>: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] Part 328.3(b)). Wetlands are a subset of "waters of the U.S." Note that the "wetlands" definition does not include unvegetated areas such as streams and ponds.

As described in the 1987 Corps of Engineers Wetlands Delineation Manual and in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Regional Supplement; USACE 1987, USACE 2007), wetlands must possess the following characteristics:

- 1. Hydrophytic Vegetation: Vegetation community dominated by plant species that are typically adapted for life in saturated soils.
- 2. Wetland Hydrology: Inundation or saturation of the soil during the growing season.
- 3. Hydric Soils: Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions.

<u>Waters of the U.S.</u> Waters of the U.S. include other waterbodies regulated by the USACE, including navigable waters, lakes, ponds, and streams, in addition to wetlands.

<u>Uplands:</u> Non-water and non-wetland areas are called uplands.

2.0 Study Area

The 1,002-acre study area is primarily centered on the existing Ambler Airport located approximately 1.5 miles north of the village of Ambler. Ambler is an Inupiat community located on the north bank of the Kobuk River, near the confluence of the Ambler and the Kobuk Rivers, 45 miles north of the Arctic Circle.

The total study area is composed of four distinct parts (Figure 1); these are briefly described in Table 1. A portion of the study area including the Ambler Airport borrow site and access corridor was previously delineated in the 2005 *Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Borrow Site and Access Corridor* (ABR 2005). By circumstance of age, the findings from the 2005 ABR mapping study are outdated and inaccuracies occur due to the quality of available source data during the time the study was completed. This report re-evaluates the 2005 ABR report; updating the existing mapping and descriptions to meet current regulatory guidelines.

Table 1. Study Area Descriptions and Locations

Study Area Name	Study Area Description	Public Land Survey System Description	Latitude and Longitude (NAD83)	Acreage
Ambler Airport Improvements Area	Area directly adjacent to the existing Ambler Airport and the 0.7 miles of road approaching the airport.	Township 20 North, Range 5 East, Sections 19, 20, 29, 30, and 31, Kateel River Meridian	67°6'25" -157°51'13"	356
Ambler Airport Borrow Site and Access Corridor	A 200 foot-wide road corridor and borrow site. The Ambler Airport borrow site is located 2 miles northeast of the Ambler Airport.	Township 20 North, Range 5 East, Sections 21, 28, and 29, Kateel River Meridian	67°7'2" -157°47'14"	170
Alternative Access Corridor to the Ambler Airport Borrow Site	An alternative 200-foot-wide road corridor to the Ambler Airport borrow site.	Township 20 North Range 5 East Sections 16, 17, 20, 21, and 29, Kateel River Meridian	67°7'10" -157°49'37"	101
Ambler River Material Site	An area located 22 miles northeast of the Ambler Airport along the Ambler River. This site would be accessed by ice road and does not include a road corridor.	Township 20 North, Range 8 East, Sections 1, 2, 11, and 12, Kateel River Meridian	67°9'23" -157°2'8"	375
			Total Study Area	1,002

3.0 Methods

As part of the re-evaluation portion of this wetland study, HDR Alaska, Inc. (HDR) investigated whether the findings from the 2005 ABR study were still accurate or whether any new data or advancements in quality of data indicate recent changes to wetlands or waterbodies. To do this, scientists considered the major wetland policy changes since 2005, reviewed recent aerial photographs and existing mapping and documentation, and refined wetland mapping using high resolution data in a Geographic Information System (GIS) database. Wetland mapping was subsequently field verified.

3.1 2005 Wetland Mapping Reevaluation

The 2005 wetland investigation, methodology, and results are described in the *Wetland Mapping and Functional Assessment in the Proposed Ambler Borrow Site and Access Corridor* (ABR 2005). The conclusions of the report are based on a field investigation that occurred from August 18-21, 2004. A total of 32 field determinations were evaluated using the 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) to determine USACE jurisdiction. The report was submitted to the USACE on April 11, 2005.

In order to validate the conclusions in the 2005 report, HDR reviewed the major regulatory policy changes since 2005. These major regulatory changes include:

- The USACE published the *Regional Supplement to Corps of Engineers Wetland Delineation Manual: Alaska Region* (USACE 2007).
- USACE and the Environmental Protection Agency (EPA) issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act (33 CFR Parts 325 and 332).
- Court decisions on Rapanos v. United States and Carabell v. United States resulted in clarification of the definition for waters of the U.S. under the Clean Water Act (EPA and USACE 2008).

 The Alaska District of USACE published Special Public Notice 2010-45: Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports outlining the minimum required information for a Jurisdictional Determination Report (USACE 2010).

These regulatory changes replace the previous wetland indictors, set guidelines for determining USACE jurisdiction, and determine what should be included in a jurisdictional determination report. A brief summary of each regulatory change is included below.

3.1.1 2007 Alaska Regional Supplement

In 2007, the USACE adopted a new regional manual for delineating wetlands in Alaska. All projects in Alaska must now follow guidance presented in the *Regional Supplement* (USACE 2007). The definition of a wetland did not change with the new manual; rather, it presented additional clarification and guidance for identifying certain indicators of wetlands in Alaska.

Field data collected in 2004 (ABR 2005) followed the protocols described in the 1987 *Wetlands Delineation Manual* (USACE 1987). These data were reevaluated using the 2007 *Regional Supplement* (USACE 2007) to determine its applicability for this report (Section 3.1).

3.1.2 2008 Mitigation Rule

On April 10, 2008 the EPA and the USACE issued the Federal Rule on Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR Parts 325 and 332). This new rule clarified how to provide compensatory mitigation for unavoidable impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act.

In 2009, Alaska implemented the Federal Rule through the Alaska District Regulatory Guidance Letter (RGL) ID. No. 09-01 (USACE 2009). The guidance preserved the requirement to first avoid and minimize impacts to wetlands and waters before proposing compensatory mitigation to offset project impacts. It also requires that appropriate and practicable compensatory mitigation be used to replace functional losses to wetlands and aquatic resources.

Aside from requiring functional assessments of wetlands and waterbodies, the RGL outlines performance standards, sets timeframes for decision-making, and establishes the requirements and standards for mitigation banks, in-lieu fee programs, and permittee-responsible mitigation. The RGL and Federal Rule provide new emphasis on mitigation banking and in-lieu fee programs and direct compensatory mitigation to the same watersheds as the permitted impact.

3.1.3 Rapanos v. United States and Carabell v. United States

In a decision on the consolidated cases Rapanos v. United States and Carabell v. United States (Rapanos), the United States Supreme Court addressed where the Federal government can apply the Clean Water Act, specifically by determining whether a wetland or tributary is a water of the U.S. In December 2008, the EPA and the USACE issued joint guidance (revised from earlier June 2007 guidance) to implement the court's decision. The guidance is now being used by the EPA regions and USACE districts to determine whether aquatic resources such as lakes, streams, and wetlands are waters of the U.S., subject to regulation under the Clean Water Act (EPA and USACE 2008).

In accordance with the guidance, the USACE will assert jurisdiction, without the need for a significant nexus finding, over all traditional navigable waters (TNW), wetlands adjacent to a TNW, non-navigable tributaries to a TNW that are relatively permanent, and wetlands that directly abut such tributaries. The USACE will assert jurisdiction over non-navigable, non-relatively permanent tributaries and their adjacent wetlands where such tributaries and wetlands have a significant nexus to a TNW. These include the following types of waters when they have a significant nexus with a TNW: (1) non-navigable tributaries that are not relatively permanent, (2) wetlands adjacent to non-navigable tributaries that are

not relatively permanent, and (3) wetlands adjacent to, but not directly abutting, a relatively permanent tributary (e.g. separated from it by uplands or by a berm, dike, or similar feature). The guidance states that the USACE will assess flow characteristics and functions of the tributary itself, together with the functions performed by any wetlands adjacent to that tributary, to determine whether collectively they have a significant nexus with a TNW (EPA and USACE 2008).

3.1.4 Consultant-Supplied Jurisdictional Determination Reports

In January 2010, the Alaska District of the USACE issued Special Public Notice 2010-45: Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2010). This guidance outlines the minimum required information for a Jurisdictional Determination Report. The necessary information includes a cover letter, narrative, location map, delineation map, and verification.

3.2 2012 Field Investigation

Between September 6-10, 2012, Malcolm Salway, a certified Professional Wetland Scientist (PWS #1762), and a wetland field assistant conducted a site visit to verify the presence or absence of wetlands and other waters of the U.S. within the study area. Locations in the field were evaluated using the USACE 1987 wetland delineation manual's three-parameter method of determining an area's wetland status and methods described in the 2007 *Regional Supplement* (USACE 1987, 2007). Standard USACE wetland determination data forms (included in the 2007 *Regional Supplement*) were completed at 34 sites and are included, along with photographs taken at each site, in Appendix A. Additionally, photographs and observational data were collected at an additional 81 locations to document sites that were similar to those where a data form had already been completed. In total, 115 locations were visited. Each location was logged into a handheld global positioning system (GPS) unit. Photographs taken at sites where data forms were not completed are included in Appendix B.

3.3 Final Mapping

Upon returning from the field, the 2005 and 2012 field data were overlain on digital orthorectified aerial photography (1-foot pixel resolution) provided by DOT&PF. The data forms and photographs of the field-visited sites were reviewed to identify wetlands and uplands present within the study area. Findings from these sites were then extrapolated to similar locations throughout the study area and wetland/upland and wetland type boundaries were digitized into a GIS database.

Although the Ambler Airport borrow site and road corridor portion of the study area had previously been mapped in 2005 with aerial imagery from 1984, the quality of the newer aerial photography provided by DOT&PF required the study area to be remapped in order to match the higher resolution aerial photography.

Delineating wetlands from aerial photography includes using 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 indicate surface
 saturation.
- Topography: Evidence of topographic high points, sloped surfaces that would allow soils to drain, and dry drainages supported classifying those areas as upland. Topographic depressions, toes of slopes, and flat topography serve as indicators of potentially poor soil drainage.

Mapped wetland types were classified using NWI mapping codes based on the U.S. Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats (Cowardin *et al.* 1979).

4.0 Results and Discussion

4.1 2005 Wetland Mapping Reevaluation

Each vegetation, hydrology, and soil indicator from the 2005 ABR study was re-evaluated using the 2007 *Regional Supplement* (Table 2). All field sites sampled by ABR were determined to be wetland. Of the 33 wetland determination points collected, 12 wetland determination points were reconfirmed using the indicators from the 2007 *Regional Supplement*. These sites were combined with the 2012 field investigation sites to determine wetland/upland boundaries delineated during final mapping. The remaining 21 field sites did not conform to the 2007 wetland indicators and were used only as supplemental field data for final mapping.

Table 2. Reevaluation of 2004 Field Investigation Data

	Wetland		Vegetation		Hydrology		Soils		2007 Pagional
2004 Data Form ID	Status According to 1987 Manual	Dominance Calculation (%)	Prevalence Index	2007 Hydrophytic Vegetation Present	2007 Wetland Hydrology Indicators	2007 Wetland Hydrology Present	2007 Hydric Soil Indicators	2007 Hydric Soil Present	2007 Regional Supplement Confirms 1987 Manual Conclusion
AMB1	Wetland	67	3.11	Y	None	N	None	N	-
AMB2	Wetland	100	3.01	Y	None	N	None	N	-
AMB-V2	Wetland	100	3.01	Y	None	N	None	N	-
AMB4	Wetland	100	3.0	Y	None	N	None	N	-
AMB5	Wetland	75	3.37	Y	None	N	None	N	-
AMB6	Wetland	67	2.91	Y	None	N	None	N	-
AMB-V3	Wetland	75	3.18	Y	None	N	None	N	-
AMB8	Wetland	80	3.06	Y	None	N	None	N	-
AMB-V4	Wetland	80	3.16	Y	None	N	None	N	-
AMB10	Wetland	100	2.62	Y	None	N	None	N	-
AMB11	Wetland	75	3.01	Y	None	N	None	N	-
AMB-V5	Wetland	100	2.29	Y	Surface water, high water table, saturation, and shallow aquitard	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB13	Wetland	75	3.05	Y	High water table, and saturation	Y	None	N	-
AMB14	Wetland	80	3.36	Y	None	N	None	N	-
AMB-V6	Wetland	100	1.17	Y	Surface water, high water table, saturation, and FAC neutral test	Υ	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB16	Wetland	67	3.23	Y	None	N	None	N	-
AMB18	Wetland	80	3.24	Y	None	N	None	N	-
AMB-V8	Wetland	100	2.64	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB20	Wetland	75	2.69	Y	High water table, saturation, and FAC neutral test	Υ	Alaska redox	Y	Wetland Status Confirmed

	Wetland		Vegetation		Hydrology		Soils		2007 Davis nal
2004 Data Form ID	Status According to 1987 Manual	Dominance Calculation (%)	Prevalence Index	2007 Hydrophytic Vegetation Present	2007 Wetland Hydrology Indicators	2007 Wetland Hydrology Present	2007 Hydric Soil Indicators	2007 Hydric Soil Present	2007 Regional Supplement Confirms 1987 Manual Conclusion
AMB21	Wetland	67	3.04	Y	High water table, saturation, and FAC neutral test	Y	None	N	-
AMB-V7	Wetland	100	2.72	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB23	Wetland	80	3.09	Y	None	N	None	N	-
AMB24	Wetland	100	1.06	Y	Surface water, high water table, saturation, and FAC neutral test	Y	Histosol or histel	Y	Wetland Status Confirmed
AMB-V11	Wetland	100	1.03	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB26	Wetland	100	2.64	Y	Saturation and FAC neutral test	Y	Alaska redox	Y	Wetland Status Confirmed
AMB-V1	Wetland	100	1.36	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB28	Wetland	100	2.58	Y	Saturation and FAC neutral test	Y	Histosol or histel	Y	Wetland Status Confirmed
AMB29	Wetland	100	3.43	Y	None	N	Alaska redox	Y	-
AMB-V10	Wetland	100	1.0	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB-V9	Wetland	100	2.28	Y	Surface water, high water table, saturation, and FAC neutral test	Y	No Soil Pit ¹	Y	Wetland Status Confirmed
AMB32	Wetland	75	3.22	Y	Sediment deposits	Υ	None	N	-
AMB33	Wetland	86	3.05	Y	None	N	Alaska redox	Y	-
AMB34	Wetland	83	3.19	Y	High water table and saturation	Y	None	N	-

^{1.} Soil pit not dug due to inundation; assumed hydric (ABR 2005).

4.2 2012 Wetland Determination Results

During the 2012 field investigation, wetland scientists focused on areas previously unvisited during the 2004 wetland investigation; therefore they did not investigate the Ambler Airport borrow site and access corridor. Wetland scientists completed 21 *Regional Supplement* wetland determination forms in the Ambler Airport improvements area and the alternative Ambler Airport borrow site and access corridor. An additional 13 wetland determination forms were collected within the Ambler River material site, for a total of 34 wetland determination forms completed. In addition, 82 observation points were taken in the study area (Table 3). Wetland determination forms and site photographs are included in Appendix A. Representative photographs of points where a wetland determination form was not completed are included in Appendix B.

Table 3. 2012 Plot Types and Locations

Location	2007 Alaska Regional Supplement Wetland Determination Data Forms			Observation Points			
	Wetland	Upland	Total	Wetland	Upland	Waters	Total
Ambler Airport Improvements Area	8	8	16	7	14	4	25
Alternative Access Corridor to the Ambler Airport Borrow Site	1	4	5	4	9	3	16
Ambler River Material Site	5	8	13	21	15	5	41
Total	14	20	34	32	38	12	82

4.2.1 Wetland Indicators

The following sections contain brief descriptions of the wetland indicators observed at each of the 2012 data form collection sites.

4.2.1.1 Vegetation

Of the 34 sites where wetland determination forms were completed (9 forest, 20 scrub, and 5 herbaceous), 32 had hydrophytic plant communities (Table 4). At wetland determination sites, scientists visually estimated the cover percent of each plant species, which was used in the 50/20 dominance calculation and for the Prevalence Index calculation.

Table 4. Hydrophytic Status of Study Area Plant Communities

General Plant Community Type	Total Number of Sites Sampled	# Sites with Hydrophytic Vegetation	Percent of Sites Sampled w/Hydrophytic Vegetation
Needleleaf Evergreen Forest	7	7	100%
Mixed Forest	2	2	100%
Broadleaf Scrub/Shrub	16	14	88%
Needleleaf Scrub/Shrub	1	1	100%
Mixed Scrub/Shrub	3	3	100%
Herbaceous	5	5	100%
Total	34	32	94%

4.2.1.2 Soils

Soil profiles were investigated at 33 locations within the study area. Of these, 15 (45 percent) had indicators supporting their classification as hydric. Soils at one site were not investigated due to inundation and were assumed hydric. The remaining 19 locations lacked hydric soil indicators, supporting their classification as non-hydric (Table 5).

Table 5. Hydric Soil Indicators Observed at Wetland Determination Sites

Indicators	Total # Sites with this Indicator	Percent of Sites with Hydric Soils that had this Indicator
Histosol or Histel (A1)	1	7%
Histic Epipedon (A2)	5	33%
Hydrogen Sulfide Odor (A4)	1	7%
Alaska Gleyed (A13)	1	7%
Alaska Redox (A14)	6	40%
Indicators of Problematic Hydric Soils		
Alaska Gleyed Without Hue 5Y or Redder Underlying Layer	1	7%

Alaska Redox (reduced mineral soil with redoximorphic concentrations along pores or roots linings) was the most common indicator observed throughout the study area, occurring at 40 percent of the sites with hydric soils. Histic epipedons, identified by a thick (8-16 inches of saturated organic material, usually at the surface) organic horizon at the ground surface, were identified at 33 percent of the sites. The organic horizons of soils judged to be histosols or histic epipedons were either saturated during the site visit or had indicators of saturation at other times during the growing season. At many wetland sites, evidence of reducing conditions (either as redoximorphic features or a positive reaction to α - α' -dipyridyl) was present in the uppermost mineral horizon of the soil pit.

4.2.1.3 Hydrology

Wetland hydrology was present at 16 of the 34 sites (47 percent) where wetland determination forms were completed (Table 6). Common primary indicators of wetland hydrology observed included surface water, high water table, and saturation. Common secondary indicators observed included presence of reduced iron, geomorphic position, and a positive FAC-neutral test.

Table 6. Hydrology Indicators Observed at Wetland Determination Sites

Primary Indicators	Total # Sites with this Indicator	Percent of Sites with Wetland Hydrology that had this Indicator
Surface Water (A1)	10	63%
High Water Table (A2)	14	88%
Saturation (A3)	15	94%
Inundation Visible on Aerial Photography (B7)	1	6%
Hydrogen Sulfide Odor (C1)	1	6%
Secondary Indicators		
Drainage Patterns (B10)	2	13%
Oxidized Rhizospheres on Living Roots (C3)	1	6%
Presence of Reduced Iron (C4)	11	69%
Stunted or Stressed Plants (D1)	1	6%
Geomorphic Position (D2)	4	25%
Shallow Aquitard (D3)	1	6%
FAC-Neutral Test (D5)	14	88%

Prior to the 2012 wetland investigations, the Kobuk River valley had experienced unusually high rainfall and all rivers in the area were at or near flood stage. Wetland scientists were aware of this information during the field visit and were able to interpret hydrology parameters accounting for the high levels of

antecedent precipitation. In general, wetland plots were expected to exhibit hydrology characteristics during the field investigation. A strong correlation existed between the hydric soil indicators and the hydrology indicators.

Permafrost within 24 inches, a shallow aquitard, was encountered at only one site on the alternative road corridor to the Ambler Airport borrow site.

4.3 Wetland Mapping

Wetlands were identified where field investigators observed indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. If any of these three requirements are not met, the site normally does not meet the USACE criteria for being classified as a wetland, and therefore would not be subject to Section 404 regulations. Areas that appear on aerial photographs to be similar to wetlands identified in the field were also identified as wetland. Wetland and waterbody classes found within the study area and approximate total acreages of each NWI classification are provided below in Table 1. Wetland, upland, and waterbody boundaries are shown on Figures 2-9. Locations of wetland determination points, photo observation points, and the 2004 field investigation data points are also shown on the figures.

Approximately 13 percent (46.7 acres) of the Ambler Airport improvements area, 24 percent (41.2 acres) of the Ambler Airport borrow site and access corridor, 49 percent (49.2 acres) of the alternative access corridor, and 52 percent (196.0 acres) of the Ambler River material site were determined to meet the USACE requirements for classification as wetlands. Additionally, approximately 2 percent (18.1 acres) of the entire study area was identified as unvegetated waters, with the majority of this acreage located in the Ambler River material site area.

All of these areas are potentially subject to USACE jurisdiction under Section 404 of the Clean Water Act, or Section 10 of the Rivers and Harbors Act of 1899.

4.4 Jurisdictional Status

The wetlands and waterbodies associated with Ambler Airport borrow site, the alternative access corridor, and the Ambler River material site are all located adjacent to the Ambler River and have a direct surface water connection to the river. The USACE has designated the Kobuk River adjacent to the town of Ambler as a TNW. Therefore all wetlands and waterbodies within these three areas are likely subject to jurisdiction under Section 404 of the Clean Water Act.

Wetlands located on the northern end of the Ambler Airport improvements area are directly connected to a RPT that flows into the Ambler River. Wetlands located at the northwest corner and the southern end of airport property are adjacent to Grizzly Creek, a RPT that flows into the Kobuk River. These wetlands are also likely subject to jurisdiction under Section 404 of the Clean Water Act.

Four wetlands completely surrounded by upland exist in the western portion of the Ambler Airport improvements area. These wetlands are dominated by emergent vegetation and are located in close proximity to wetlands directly adjacent to Grizzly Creek. The farthest one is located approximately 400 feet away and the nearest is located approximately 80 feet from wetlands with a direct hydrological connection to Grizzly Creek. Due to the likelihood of a substantial subsurface hydrological connection between these wetlands, it is likely that these areas are also subject to jurisdiction of the USACE under Section 404 of the Clean Water Act. The USACE is ultimately responsible for all jurisdictional determinations.

Table 7. Mapping Summary by NWI Code

NWI Mapping Code	Description	Acreage		
	Needleleaved Evergreen Forested Wetlands			
PFO4/SS1B	Saturated needleleaved evergreen forested/broadleaved deciduous scrub-shrub wetland	28.5		
PFO4/SS4B	Saturated needleleaved evergreen forested/scrub-shrub wetland	29.8		
PFO4B	Saturated needleleaved evergreen forested wetland	2.1		
	Needleleaved Evergreen Forested Wetland Subtotal	60.4		
	Broadleaved Scrub-Shrub Wetlands			
PSS1C	Seasonally flooded broad-leaved deciduous scrub-shrub wetland	27.8		
PSS1F	Semi-permanently flooded broad-leaved deciduous scrub-shrub wetland	4.5		
PSS1/EM1B	Saturated broad-leaved deciduous scrub-shrub/emergent wetland	68.6		
PSS1/EM1C	Seasonally flooded broad-leaved deciduous scrub-shrub/emergent wetland	30.1		
PEM1/SS1B	Saturated emergent/broad-leaved deciduous scrub-shrub wetland	23.2		
PEM1/SS1C	Seasonally flooded emergent/broad-leaved deciduous scrub-shrub wetland	40.9		
	Broadleaved Scrub-Shrub Wetland Subtotal	195.1		
	Needleleaved Scrub-Shrub Wetlands			
PSS4B	Saturated needleleaved evergreen scrub-shrub wetland	13.4		
PSS4/EM1B	Saturated needleleaved evergreen scrub-shrub/emergent wetland	0.8		
	Needleleaved Scrub-Shrub Wetland Subtotal	14.7		
	Mixed Scrub-Shrub Wetlands			
PSS4/1B	Saturated needleleaved evergreen/broadleaved deciduous scrub-shrub wetland	9.9		
PSS1/4B	Saturated broad-leaved deciduous/needleleaved evergreen scrub-shrub wetland	9.0		
	Mixed Scrub-Shrub Wetland Subtotal	18.9		
	Herbaceous Wetlands			
PEM1C	Seasonally flooded emergent wetland	14.4		
PEM1F	Semi-permanently flooded emergent wetland	12.0		
	Herbaceous Wetland Subtotal	26.4		
	Waterbodies			
PUBH	Pond, unconsolidated bottom, permanently flooded	4.0		
PUSC	Pond, unconsolidated shore, seasonally flooded	<0.1		
R3UBH	Upper perennial stream, permanently flooded	12.6		
R3USC	Upper perennial stream, unconsolidated shore, seasonally flooded	1.5		
	Waterbody Subtotal	18.1		
	Wetland and Waterbody Subtotal	333.1		
	Uplands			
U	Non-wetland or Non-waters of the U.S.	668.4		
	Study Area Total Acreage	1,001.5		

5.0 Wetland Habitat Types

Sections 4.1 through 4.8 contain descriptions of the habitat types and their wetland indicators.

5.1 Black Spruce Forest/Scrub-Shrub Wetland

Mapping classifications: PFO4B, PFO4/SS1B, PFO4/SS4B.

Description: Black spruce forest/scrub-shrub wetlands are found around the perimeter of the existing runways and clearings of the airport improvement area. This habitat type is most prevalent in the

alternative access road corridor to the Ambler Airport borrow site. It is not found at the Ambler River material site. This habitat type is dominated by black spruce (*Picea mariana*) ranging from 15 to 20 feet in height. The shrub understory typically includes Labrador tea (*Ledum decumbens*), dwarf birch (*Betula nana*), bog blueberry (*Vaccinium uliginosum*), cloudberry (*Rubus chamaemorus*), and lingonberry (*Vaccinium vitis-idaea*).

All black spruce forest/scrub-shrub wetlands displayed a histic epipedon and a water table within the upper 12 inches of the soil profile. The underlying mineral soil of these plots reacted positively when tested with alpha-alpha-dipyridyl. One plot sampled exhibited permafrost at 19 inches.

5.2 Black Spruce Scrub-Shrub Wetland

Mapping classifications: PSS4B, PSS4/1B, PSS1/4B, PSS4/EM1B.

Description: Black spruce scrub-shrub wetlands occur across the entire study area. Near the airport it is found at the north end of the primary runway. This area appears to be part of the adjacent black spruce bog but has been cleared for the runway safety area. This area is dominated by stunted black spruce, dwarf birch, bog blueberry, Richardson's willow (Salix richardsonii), and several species of sedge (Carex spp.). Other common species include Labrador tea, cloudberry, and lingonberry.



Inset 1. Black Spruce Forest/Scrub-Shrub Wetland



Inset 2. Black Spruce Scrub/Shrub Wetland

Like the black spruce forest/scrub-shrub wetlands, the black spruce scrub-shrub wetlands all displayed a histic epipedon and a water table within the upper 12 inches on the soil profile. The mineral soil below the organic horizon also reacted positively to alpha-alpha-dipyridyl. One plot also had a hydrogen sulfide odor within 12 inches of the soil surface.

5.3 Low Shrub/Sedge Wetland

Mapping classifications: PSS1/EM1B, PEM1/SS1B, PSS1/EM1C, PEM1/SS1C.

Description: The low shrub/sedge wetland habitat is found at the north end of the primary runway and is the most abundant wetland habitat in the Ambler River material site comprising 148 acres (39 percent) of the area. This habitat type is dominated by dwarf birch, bog blueberry, Richardson's willow, arctic willow (Salix arctica), diamond-leaf willow (Salix pulchra), and several species of sedge. Other common species include Labrador tea, cloudberry, black spruce, and lingonberry. The black spruce are very sparse, if present, and between 1-3 feet in height.

Low shrub/sedge wetland soil is typically characterized by the Alaska Redox hydric soil indicator. All plots were saturated in the upper 12 inches and half the plots were inundated during the field visit. The majority of the profiles reacted positively to alpha-alpha-dipyridyl.

5.4 Willow Thicket Wetland

Mapping classifications: PSS1C, PSS1F.

Description: Willow thicket wetlands are located west of the primary runway within the area of the proposed airport apron access road, in the area surrounding Grizzly Bridge, and throughout the Ambler River material site. This community type appears to be strongly influenced by overbank flooding of perennial and intermittent streams and, additionally, in small swales in the Ambler River material site. Other species include dwarf birch, Labrador tea, bog blueberry, marsh cinquefoil (Potentilla palustris), and Kotzebue's grass-of-Parnassus (Parnassia kotzebuei).

Two wetland thicket plots were sampled during the field investigation. One displayed a histic epipedon and at the other no soil pit was dug due to approximately 12 inches of inundation. Both plots were located at the bottom of a valley adjacent to a stream channel.



Inset 3. Low Shrub/Sedge Wetland



Inset 4. Willow Thicket Wetland



Inset 5. Graminoid Meadow Wetland

5.5 Graminoid Meadow Wetland

Mapping classifications: PEM1C.

Description: These areas are found in small depressions either surrounded by forest or within a wetland complex that is seasonally flooded. This habitat type is dominated by several species of sedge and cottongrass (Carex and Eriophorum spp.), marsh cinquefoil, and sphagnum moss. Other common species surrounding the outer edge of these sedge meadows include Labrador tea, bog blueberry, dwarf birch, lingonberry, and crowberry (Empetrum nigrum). Soils in these wetlands were typically histosols. One plot displayed the Alaska Gleyed hydric soil indicator with only secondary indicators for hydrology.

5.6 Sedge Marsh Wetland

Mapping classifications: PEM1F.

Description: These areas usually are around the outer perimeter of open water habitats (ponds) or extensive flats with poor drainage. This habitat type is present in all parts of the study area; however, it is the least prevalent wetland habitat described. In the Ambler Airport improvements area, small sedge marshes are found in depressions west of the existing primary runway and in the south alternative road corridor. Several large sedge marshes are present in the Ambler River material site. The vegetation community is dominated by sedges and cottongrass (Carex and Eriophorum spp.), marsh cinquefoil, and sphagnum moss. Other common species surrounding the outer edge of these sedge meadows include Labrador tea, bog blueberry, dwarf birch, lingonberry, crowberry.

5.7 Waterbodies

5.7.1 **Ponds**

Mapping classifications: PUBH, PUSC.

Description: Open water habitats were observed in numerous depressions within the study area. The duration of surface inundation may vary, but it generally inhibits non-aquatic plant growth. Twelve ponds were mapped. Of these, seven ponds were located in the Ambler River material site area and three ponds were mapped in the Ambler Airport improvements area.



Inset 6. Sedge Marsh Wetland



Inset 7. Pond



Inset 8. Perennial Stream

5.7.2 Streams

Mapping classifications: R3UBH, R3USC.

Description: All streams mapped within the study area are perennial (R3UBH) and are side channels of the Ambler River. These streams generally have a substrate consisting of rock, sand, and gravel.

Unvegetated gravel/sand bars (R3USC) are associated with perennial streams and are located below the ordinary high water mark of the stream. Almost all (99 percent) of the streams mapped are associated with the Ambler River material site area.

5.8 Uplands

Uplands are areas that did not have evidence of one or more of the three parameters required for classification as wetlands. Upland habitats encountered in the field included white spruce (*Picea glauca*) forests, mixed white spruce and aspen (*Populus tremuloides*) forests, low shrub and graminoid meadows, disturbed shrub meadows, and disturbed unvegetated areas.

Upland habitats covered the majority of the study area; however in the Ambler River material site area uplands accounted for 48 percent (179 acres) of the area. Uplands sampled in the field were generally dominated by hydrophytes, but lacked both the indicators for hydric soil and wetland hydrology.

6.0 Habitat Type Summary

A summary of the habitat types mapped and their associated NWI codes are included in Table 8. Acreages are divided into habitat types by location within the study area.



Inset 9. White Spruce Forest



Inset 10. White Spruce/Aspen Forest



Inset 11. Low Shrub Meadow Upland

Table 8. Habitat Mapping Summary

Study Area	Table 8. Habitat Mapping Habitat Type	NWI Codes	Acreage
Study Alea	Black Spruce Forest/Shrub Wetland	PFO4/SS1B, PFO4/SS4B	21.6
	Black Spruce Scrub/Shrub Wetland	· · · · · · · · · · · · · · · · · · ·	11.5
	Low Shrub/Sedge Wetland	PSS1/4B, PSS4/1B, PSS4B PSS1/EM1B, PSS1/EM1C	3.1
	Willow Thicket Wetland	PSS1C, PSS1F	7.0
	Graminoid Meadow Wetland	PEM1C	2.5
Ambler Airport Improvements Area			
	Sedge Marsh Wetland	PEM1F	0.6
	Pond	PUBH	0.1
	Stream	R3UBH	0.3
	Upland	U	308.8
		Ambler Airport Improvements Area Subtotal	355.5
	Black Spruce Forest/Shrub Wetland	PFO4/SS1B	5.1
	Black Spruce Scrub/Shrub Wetland	PSS1/4B, PSS4/1B, PSS4/EM1B	10.0
	Low Shrub/Sedge Wetland	PSS1/EM1B	11.2
Ambler Airport Perrou	Willow Thicket Wetland	PSS1C	7.5
Ambler Airport Borrow Site and Access	Graminoid Meadow Wetland	PEM1C	0.6
Corridor	Sedge Marsh Wetland	PEM1F	6.5
	Pond	PUBH	0.2
	Stream	R3UBH	0.1
	Upland	U	128.9
	Ambler Airport Bor	row Site and Access Corridor Area Subtotal	170.1
	Black Spruce Forest/Shrub Wetland	PFO4/SS1B, PFO4/SS4B, PFO4B	33.8
	Black Spruce Scrub/Shrub Wetland	PSS1/4B, PSS4/1B, PSS4B, PSS4/EM1B	11.1
	Low Shrub/Sedge Wetland	PSS1/EM1C	0.6
Alternative Access	Willow Thicket Wetland	PSS1C	1.1
Corridor to the Ambler	Graminoid Meadow Wetland	PEM1C	0.3
Airport Borrow Site	Sedge Marsh Wetland	PEM1F	1.7
	Pond	PUBH	0.6
	Upland	U	52.0
	Alternative Access Corridor to the	e Ambler Airport Borrow Site Area Subtotal	101.2
	Black Spruce Scrub/Shrub Wetland	PSS1/4B	0.5
	Low Shrub/Sedge Wetland	PSS1/EM1B, PSS1/EM1C, PEM1/SS1B, PEM1/SS1C	147.8
	Willow Thicket Wetland	PSS1C	16.7
Ambler River Material	Graminoid Meadow Wetland	PEM1C	10.9
Site	Sedge Marsh Wetland	PEM1F	3.3
	Pond	PUBH, PUSC	3.1
	Stream	R3UBH, R3USC	13.7
	Upland	U	178.7
		Ambler River Material Site Area Subtotal	374.7
		Total	1,001.5

7.0 Wetland Functional Assessment

This section provides information regarding physical and ecological processes that can occur in the wetland and waterbodies mapped within the study area. Wetland functions are defined as the chemical, physical, and biological processes or attributes that contribute to the self-maintenance of a wetland and relate to the ecological significance of wetland properties without regard to subjective human values (American Society for Testing and Materials 1999). Not all wetlands perform all functions, nor do they perform all functions to the same extent. For example, a wetland's geographic location may determine its habitat functions, and the location of a wetland within a watershed may determine it's hydrologic or water quality functions. The principal factors that determine how a wetland performs these functions are climatic conditions, quantity and quality of water entering and leaving the wetland, and disturbances or alteration within the wetland or the surrounding ecosystem (Novitzki et al. 1997).

Due to the limited time available for the field work and the remote location of Ambler, this assessment is primarily based on a best professional judgment and indicators observed in the field. Physical features that may contribute to or prevent certain functions from occurring were evaluated for the wetlands and waterbodies within the study area. Examples of such indicators include a sites proximity to Ambler River, a wetland's vegetation type, the amount of open water present, and the wetland's topographic position and location in the watershed. For each wetland type, HDR considered these indicators and observations across the study area to define what functions mapped wetlands and waterbodies may perform. Wetland data sheets, site photographs, GIS data layers, and other resource study reports for the project were used to identify indicators of wetland function.

Many of the study area wetlands may improve water quality of the Ambler River and its tributaries (which flows to the Kobuk River) because the wetland soils retain sediments, nutrients, and pollutants. However, these water quality functions may not be important because the surrounding area is primarily undeveloped. The effectiveness of water quality functions may become more important in wetland areas that are immediately adjacent to proposed airport improvements.

Hydrologically, the study area wetland types perform flow regulation and erosion control functions because of surface and subsurface storage of waters and their proximity to the Ambler River. Because they are located near the barren, unvegetated developed areas, these wetlands may retain potentially pollutant-laden airstrip and road runoff rather than releasing it into nearby drainages and ultimately into the Ambler River.

The surrounding region provides relatively undisturbed habitat for many mammal and bird species. These habitats provide sufficient tree and ground cover for many small mammals; species that may utilize these areas to breed and forage include lynx, wolverine, marten, ermine, red fox, mink, and snowshoe hare. Gray wolf, caribou, red fox, and black and brown bears may forage in many of the habitat types mapped within the study area. These areas may also provide suitable habitat for songbirds and hunting areas for raptors. Wildlife use of habitats located adjacent to the existing airport and the village of Ambler is probably limited because of its close proximity to disturbed areas and lack of cover and food.

Wetland functions for the Ambler Airport borrow site and access road corridor were previously evaluated in the 2005 *Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Borrow Site and Access Corridor* (ABR 2005). The primary wetland functions were sediment and toxicant retention, nutrient retention, erosion control, and supporting wildlife habitat. The 2012 field investigation confirmed that these functions have not been altered since 2005.

The Ambler River material site was not previously assessed. This site is within the wide floodplain of the Ambler River, in pristine condition and located approximately 22 miles from the village of Ambler. Functions of the Ambler River material site are primarily associated with its adjacency to the Ambler River. Wetland functions performed by all Ambler River material site wetlands include sediment and toxicant retention, erosion control, streamflow maintenance, and surface water detention. It also likely provides moderate to high quality habitat for passerines, caribou, and moose.

8.0 Categories of Wetland Function

Using field observations and the 2005 *Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Borrow Site and Access Corridor* (ABR 2005), wetlands within the study area were characterized according to USACE RGL No. 09-01 in order to support the permitting process. The wetlands have been categorized into four functional categories: Category I, II, III, and IV (USACE 2009). The categories are summarized here and further described USACE RGL No. 09-01.

Category I – High functioning wetlands

These wetlands are the "cream of the crop". Generally, these wetlands are less common. These are wetlands that: 1) provide a life support function for threatened or endangered species that has been documented; 2) represent a high quality example of a rare wetland type; 3) are rare within a given region; or 4) are undisturbed and contain ecological attributes that are impossible or difficult to replace within a human lifetime, if at all. Examples of the latter are mature forested wetlands that may take a century to develop, and certain bogs and fens with their special plant populations that have taken centuries to develop. The position of the wetland in the landscape plays an integral role in overall watershed health.

Category II – High to moderate functioning wetlands

These wetlands are those that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are either difficult to replace (such as bogs); or 3) provide very high functions, particularly for wildlife habitat. These wetlands occur more commonly than Category I wetlands, but still need a high level of protection.

Category III - Moderate to low functioning wetlands

These wetlands can provide important functions and values. They can be important for a variety of wildlife species and can provide watershed protection functions depending on where they are located. Generally these wetlands will be smaller and/or less diverse in the landscape than Category II wetlands. These wetlands usually have experienced some form of degradation, but to a lesser degree than Category IV wetlands.

Category IV – Degraded and low functioning wetlands

These wetlands are the smallest, most isolated, have the least diverse vegetation, may contain invasive species, and have been degraded by humankind. These are wetlands that we should be able to replace and, in some cases, be able to improve from a habitat standpoint. These wetlands can provide important habitat functions and values, and should to some degree be protected depending on where they are located in the watershed and the condition of that watershed (urban vs. rural). In some areas, these wetlands may be providing groundwater recharge and water pollution prevention functions and, therefore, may be more important from a local point of view.

A total of 331.9 acres of wetlands and waterbodies were evaluated for their contributions to the surrounding ecosystem. Based on functional performance, these mapped areas were categorized into

the USACE RGL No. 09-01 categories outlined above. Figures 10 through 17 show the extent and location of each functional category.

8.1 Category I – High functioning wetlands

Approximately 30.0 acres of wetlands and waterbodies are proposed for Category I classification, including:

- 1) All perennial streams (R3UBH) and unconsolidated shores (R3USC). Streams export organic material and nutrients to downstream aquatic systems and potentially provide habitat for wildlife and resident fish.
- 2) All perennial and seasonal ponds (PUBH, PUSC) with a surface hydrological connection to downstream wetlands and waterbodies. These ponds potentially provide resident fish habitat and are important for nutrient retention. Many of these ponds function similar to streams when hydrologic connections exist upstream and downstream of the pond.
- 3) All wetlands and wetland types that score High or Moderate-High for two or more functions in the 2005 *Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Borrow Site and Access Corridor* (ABR 2005). These wetland types include all streams (R3UBH) and sedge marsh wetlands (PEM1F). These wetland types received high ratings for both groundwater discharge and wildlife habitat. Sedge marsh wetlands also are important for exporting organic carbon and retaining nutrients.

8.2 Category II - High to moderate functioning wetlands

Approximately 118.9 acres of wetlands and waterbodies are proposed for Category II classification including:

- 1) Depressional wetlands (PUBH, PEM1C) adjacent to the Ambler Airport. These wetlands are seasonally flooded or wetter and are important for sediment and toxicant retention.
- 2) Graminoid meadow wetlands (PEM1C). Graminoid meadow wetlands perform nutrient retention and function similarly to sedge marsh wetlands. However, the lower coverage by shallow water may restrict wildlife use by some species that need open water for foraging (ABR 2005).
- 3) Willow thicket wetlands (PSS1C, PSS1F). These areas are found adjacent to perennial streams within the study areas. These wetlands are important for erosion control and flow regulation. Also, moose may prefer these areas as winter habitat due to the presence of preferred forage and their proximity to a travel corridor when the river freezes (ABR 2005).
- 4) All wetlands directly adjacent to streams. These wetlands provide carbon inputs as well as bank stabilization functions to these highly functioning waterbodies. These wetlands include NWI types PSS1F, PEM1C, PSS1/EM1C, PSS1/EM1B, PFO4/SS4B.

8.3 Category III -Moderate to low functioning wetlands

Approximately 184.2 acres of wetlands and waterbodies are proposed for Category III classification. These wetlands typically have a saturated water regime and are abundant throughout the region. These wetlands include:

1) All remaining wetland types not classified as Category I or II wetland types. These include black spruce forest/shrub wetlands, black spruce scrub/shrub wetlands and low shrub/sedge wetlands. These wetland types perform 7 or more functions at a Low or Low-Moderate rating as described in 2005 Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Borrow Site and Access Corridor (ABR 2005).

8.4 Category IV - Degraded and low functioning wetlands

The study area is remote with limited development, therefore no wetlands are proposed for Category IV classification.

The table below (Table 9) summarizes the acreage and NWI mapping types assigned to each functional category.

Table 9. Summary of Proposed Wetland Categorization

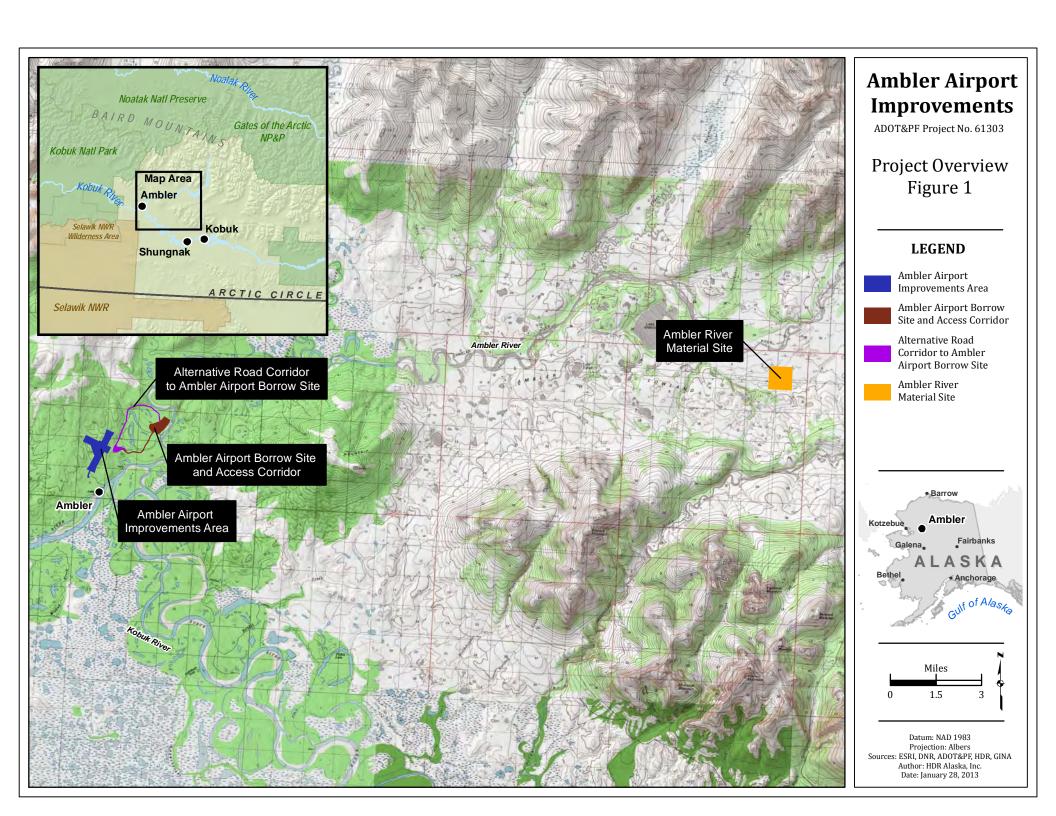
Proposed Functional Category	NWI Wetland Types	Acreage
Category I	R3UBH, R3USC, PUBH, PUSC, PEM1F	30.0
Category II	PEM1C, PEM1/SS1C, PSS1/EM1C, PSS1C, PSS1F, PSS4/EM1B, PFO4/SS4B	118.9
Category III	PEM1/SS1B, PSS1/EM1B, PSS4/EM1B, PSS1/4B, PSS4/1B, PSS4B, PFO4/SS1B, PFO4/SS4B, PFO4B	184.2
Category IV	N/A	0.0
Total		333.1

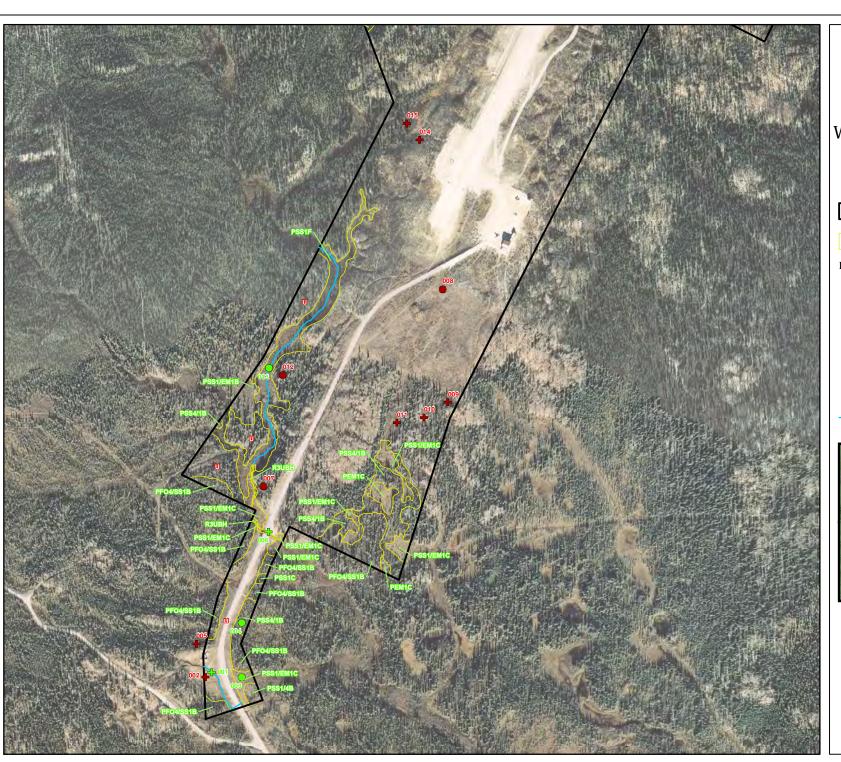
9.0 Compensatory Mitigation

In 2008 the Federal Register for EPA 40 CFR 230 and USACE 33 CFR 332 published a final rule that addresses compensatory mitigation for unavoidable losses of aquatic resources. Consequently, compensatory mitigation is expected to be required for most projects involving wetland impacts. Furthermore, USACE RGL No. 09-01 requires that Section 404 permit applicants submit a compensatory mitigation plan with permit applications (USACE 2009). The wetlands and waterbodies in the project site have been proposed for management categories that range from "High" (Category I) to "Moderate to Low" (Category III). Final mitigation ratios will be negotiated with the USACE during the Section 404 permitting process.

10.0 References

- ABR, Inc-Environmental Research and Services (ABR). 2005. Final Report Preliminary Mapping and Functional Assessment of Wetlands in the Proposed Ambler Material Site and Access Corridor. Fairbanks, AK.
- American Society for Testing Material (ASTM). 1999. Standard Guide for Assessment of Wetland Functions. Subcommittee E50.05.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/ABS-79/31. U.S. Fish and Wildlife Service: Office of Biological Services. Washington D.C.
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- U.S. Army Corps of Engineers (USACE). 2010. Special Public Notice 2010-45 Alaska District: Consultant-Supplied Jurisdictional Determination Reports. Dated January 29, 2010. Anchorage, AK.
- U.S. Army Corps of Engineers (USACE). 2009. Regulatory Guidance Letter No. 09-01 Alaska District Implementation of the Federal Rule on Compensatory Mitigation: Compensatory Mitigation for Losses of Aquatic Resources; Final Rule, dated April 10, 2008. CEPOA-RD.
- U.S. Army Corps of Engineers (USACE). 2007. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region. J.S. Wakeley, R.W. Lichvar, and C.V. Noble, eds. ERDC/EL TR-06-3. U.S. Army Engineer Research and Development Center. Vicksburg, MS.
- U.S. Army Corps of Engineers Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Vicksburg, MS.
- U.S. Federal Register. November 13, 1986. Part II. Rules and Regulations, Vol. 51, No. 219. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers; Final Rule.
- U.S. Federal Register. April 10, 2008. Part II. Rules and Regulations, Vol. 73, No. 70. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 325 and 332, Regulatory Programs of the Corps of Engineers; Final Rule.





ADOT&PF Project No. 61303

Wetland Delineation Figure 2

LEGEND

Study Area

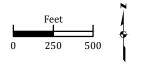
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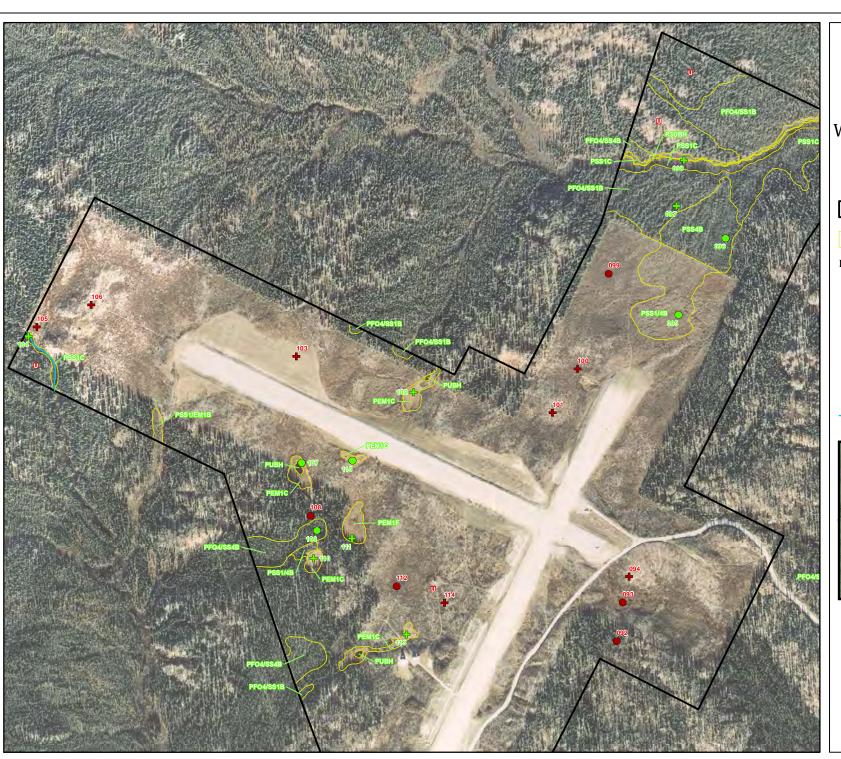
Data Collection Sites

- Standard JD Form Upland
- + Observation Point Upland
- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 3

LEGEND

Study Area

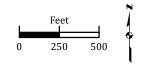
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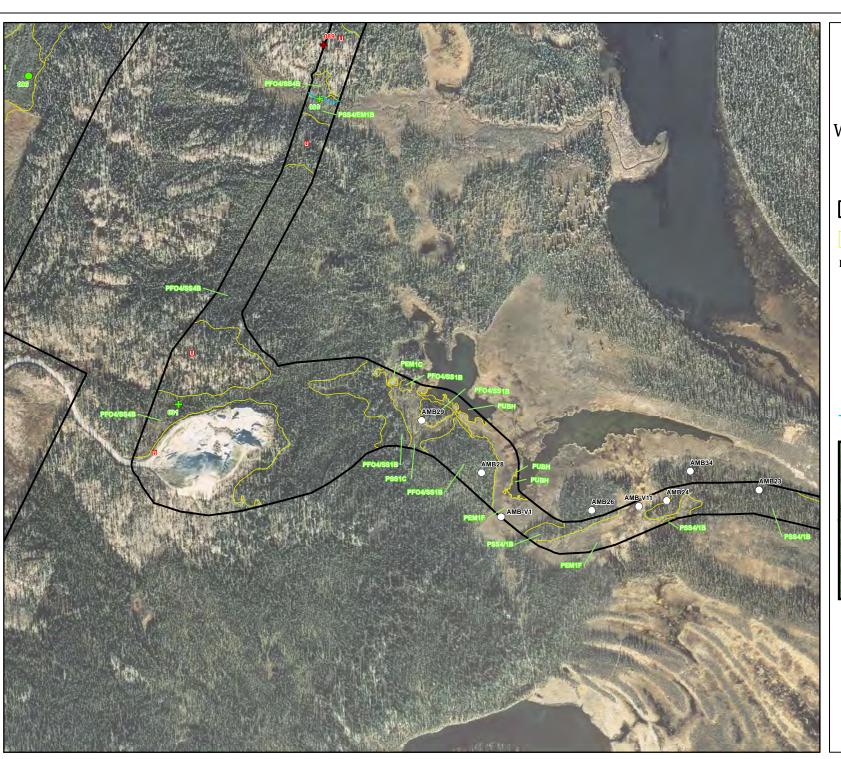
Data Collection Sites

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- + Observation Point Upland
- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 4

LEGEND

Study Area

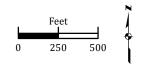
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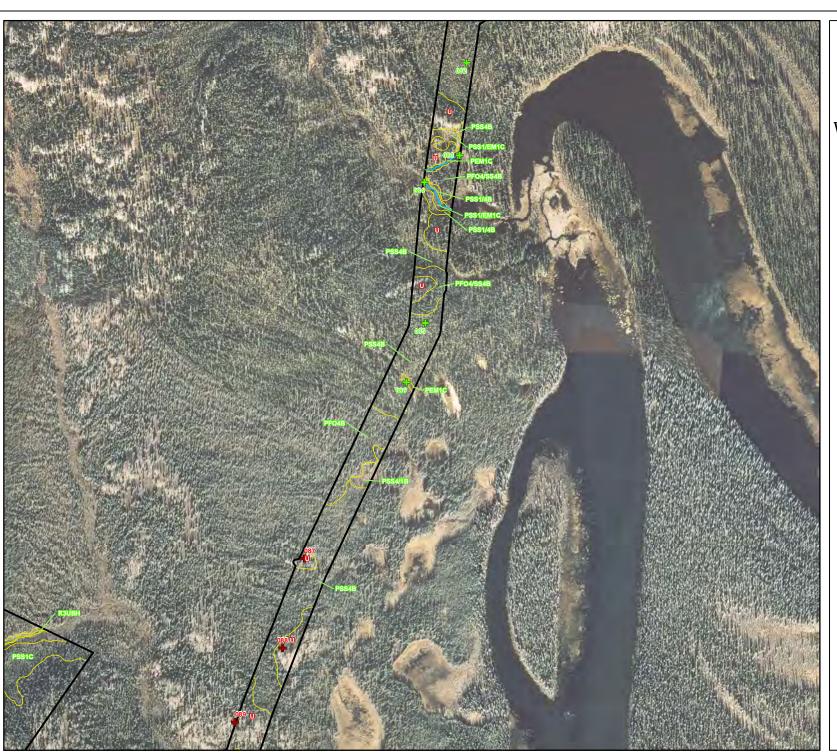
Data Collection Sites

- Standard JD Form Upland
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- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- 2004 Field Points (ABR 2005)

— Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 5

LEGEND

Study Area

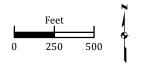
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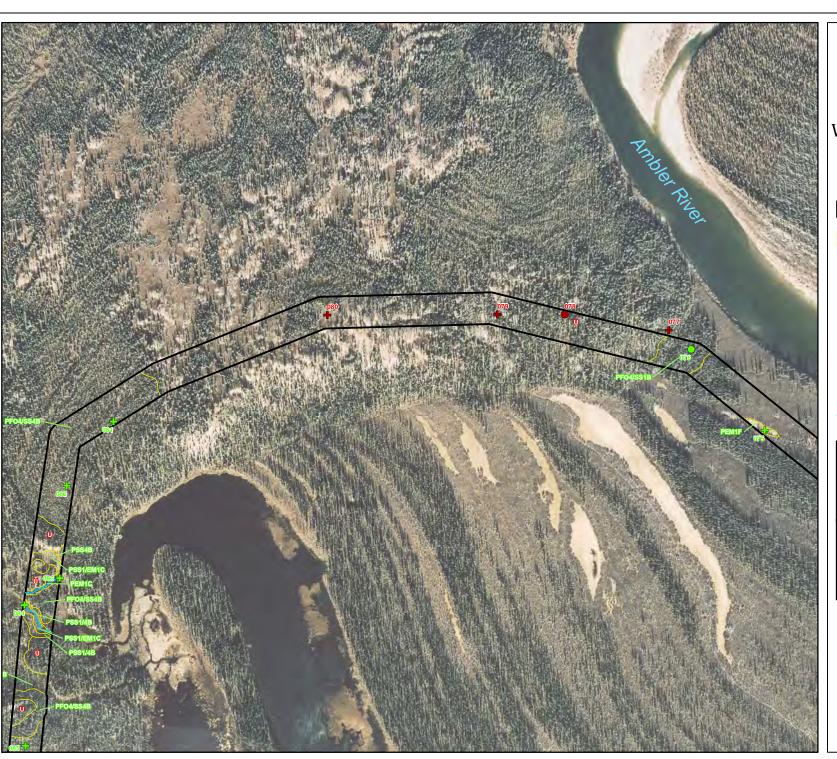
Data Collection Sites

- Standard JD Form Upland
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- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- 2004 Ft. 11
- 2004 Field Points (ABR 2005)

Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 6

LEGEND

Study Area

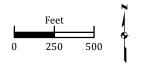
Wetland, Wetland Type, and Upland Boundary

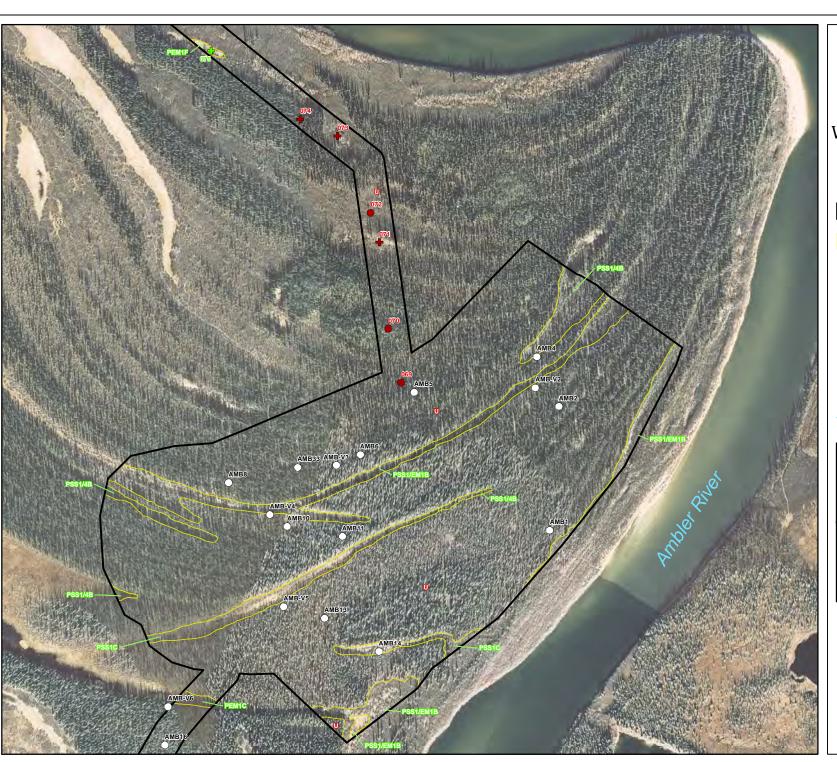
Data Collection Sites

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- Standard JD Form Wetland
- Observation Point -
- Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

- Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 7

LEGEND

Study Area

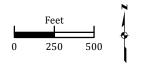
Wetland, Wetland Type, and Upland Boundary

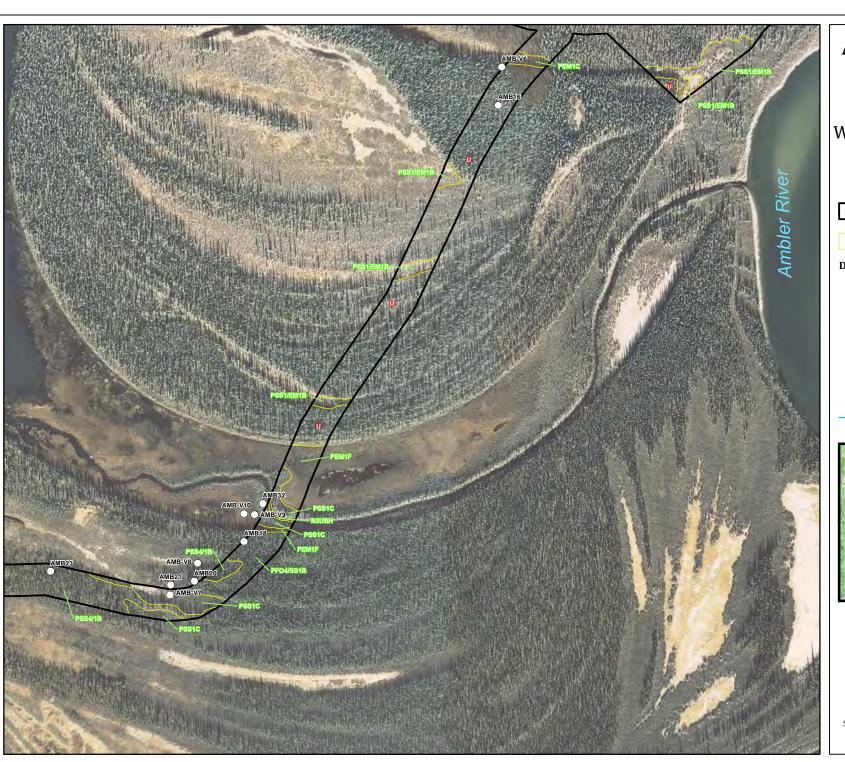
Data Collection Sites

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- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 8

LEGEND

Study Area

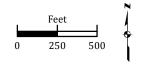
Wetland, Wetland Type, and Upland Boundary

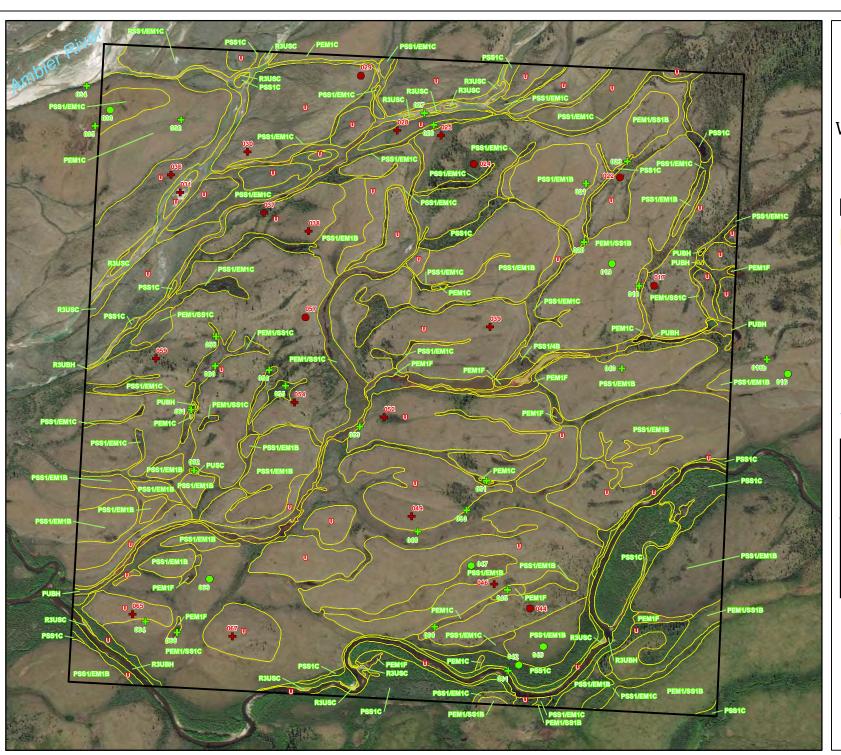
Data Collection Sites

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- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

Ambler Streams







ADOT&PF Project No. 61303

Wetland Delineation Figure 9

LEGEND

Study Area

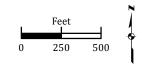
Wetland, Wetland Type, and Upland Boundary

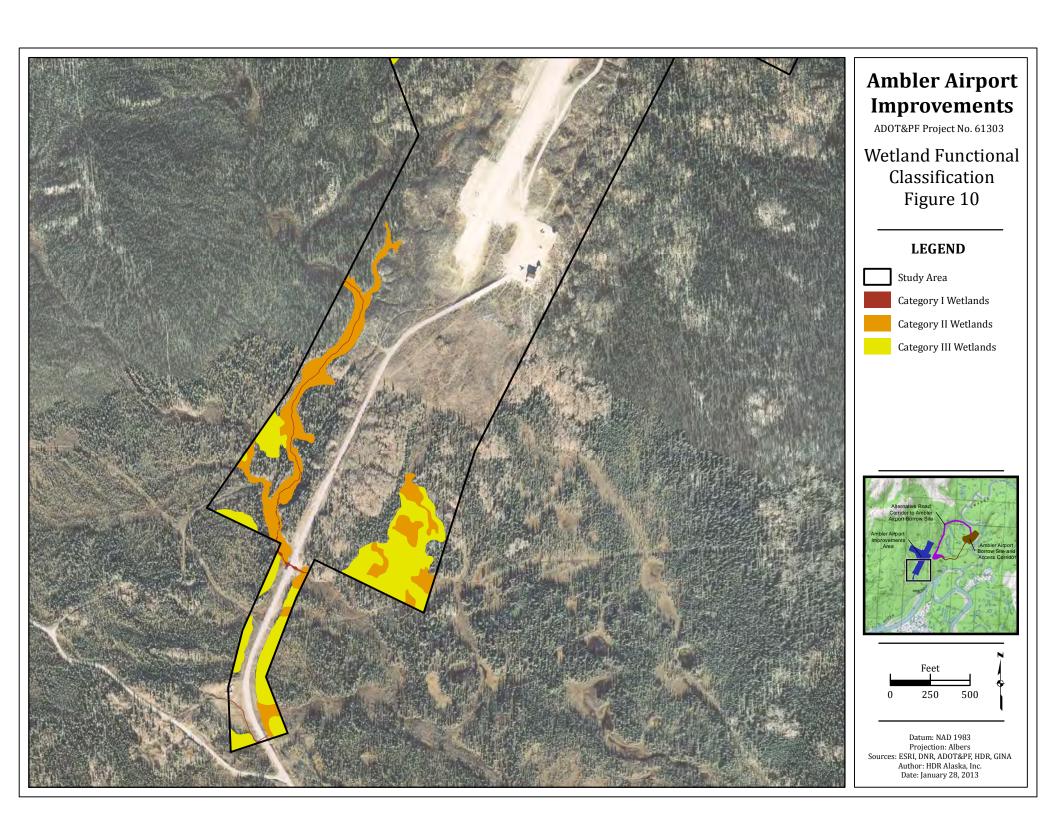
Data Collection Sites

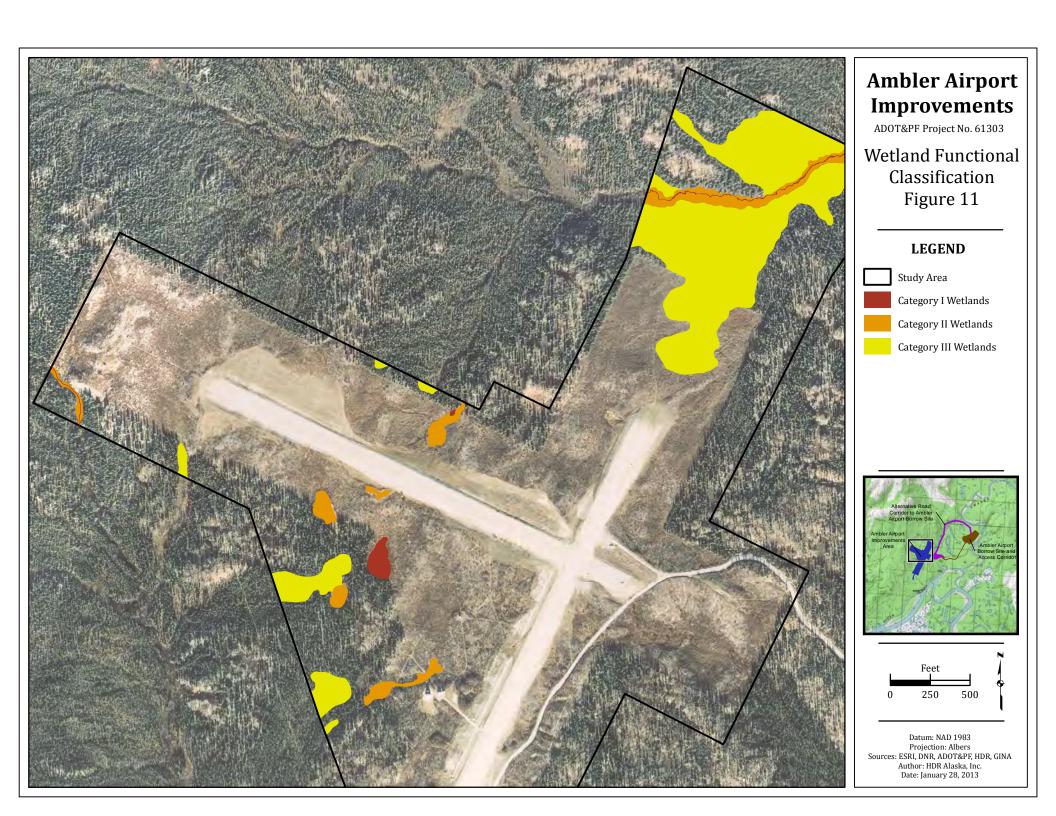
- Standard JD Form Upland
- + Observation Point Upland
- Standard JD Form Wetland
- Observation Point Wetland or Waterbody
- O 2004 Field Points (ABR 2005)

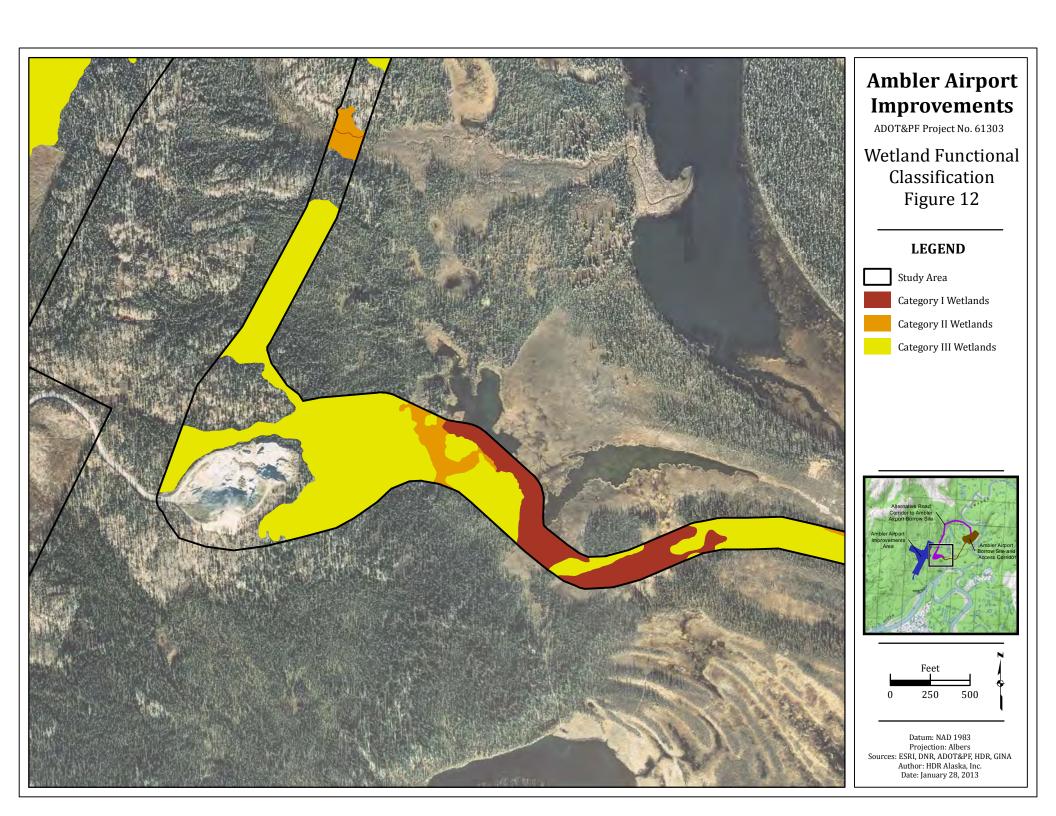
- Ambler Streams

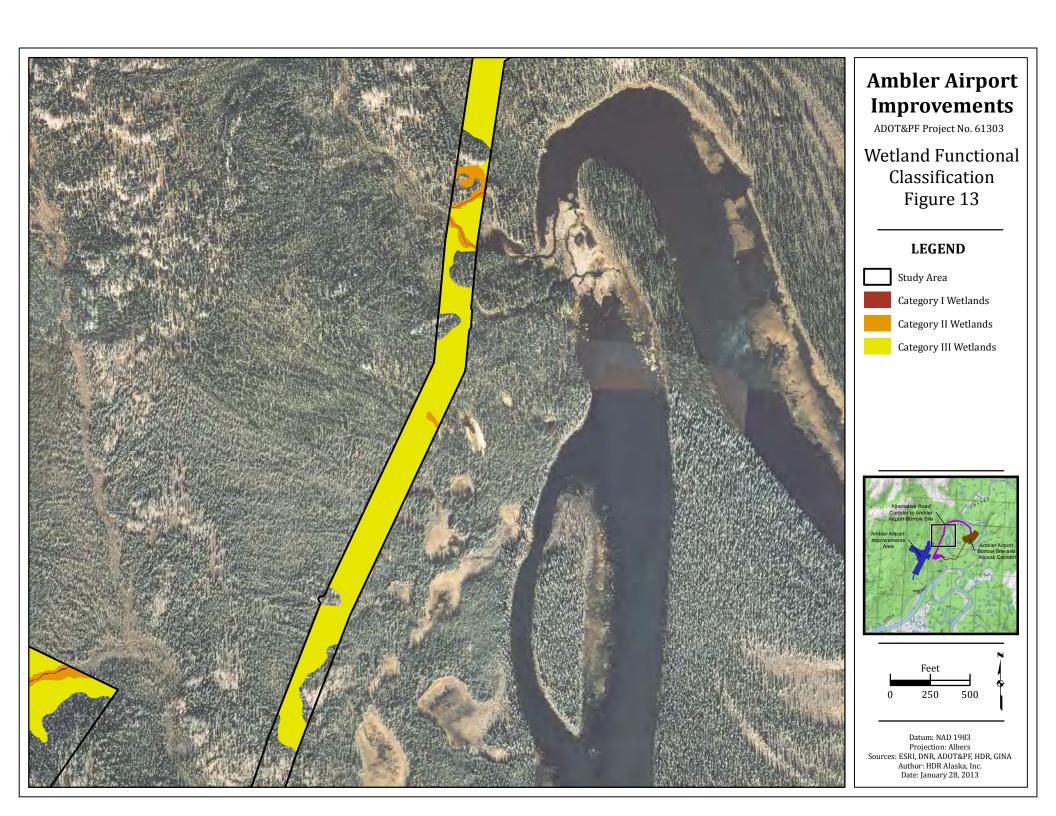


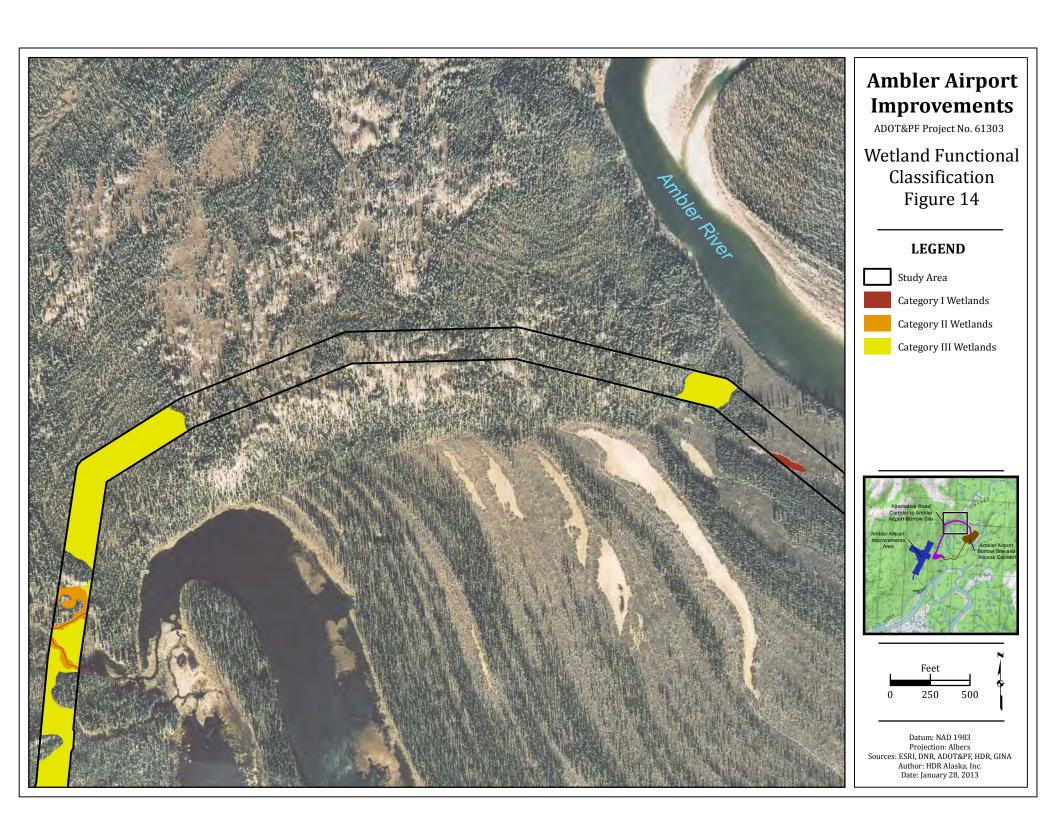


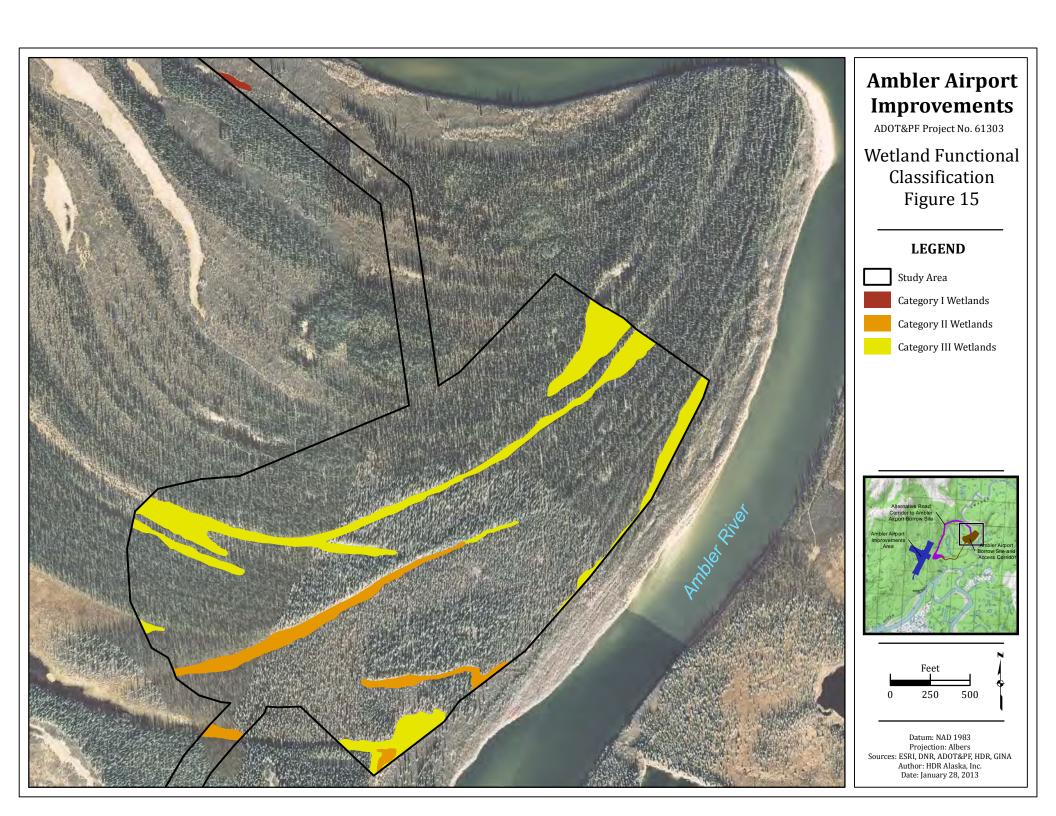


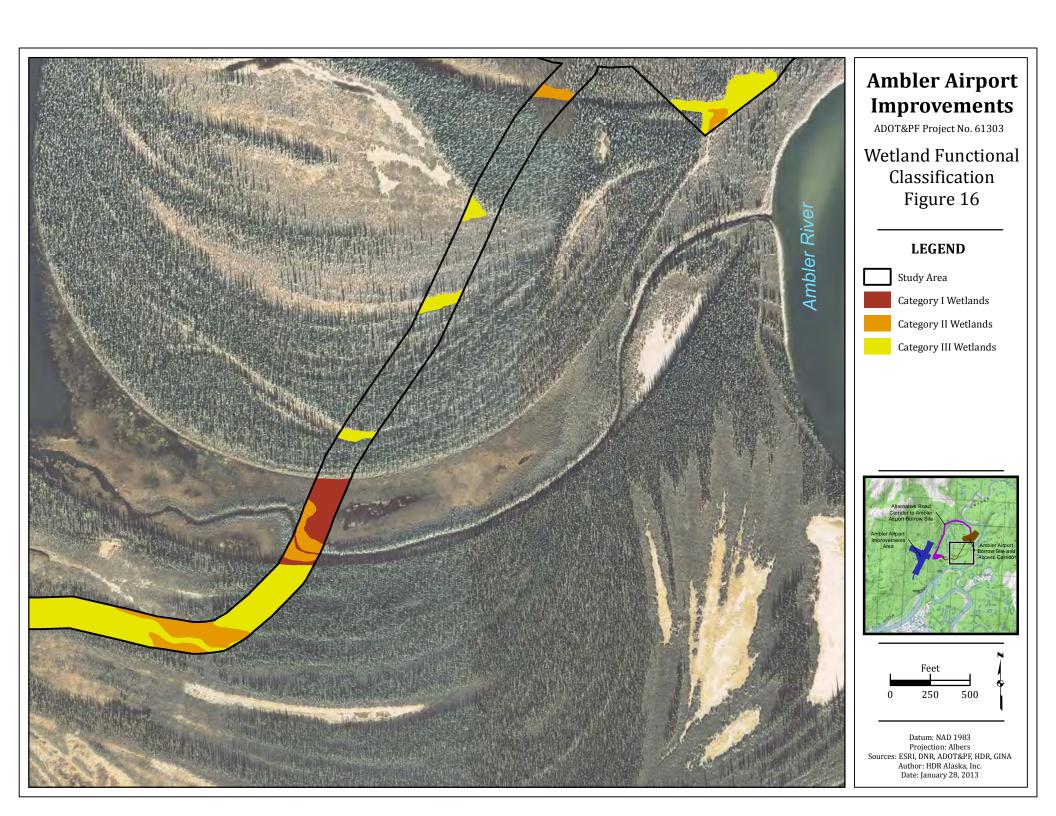


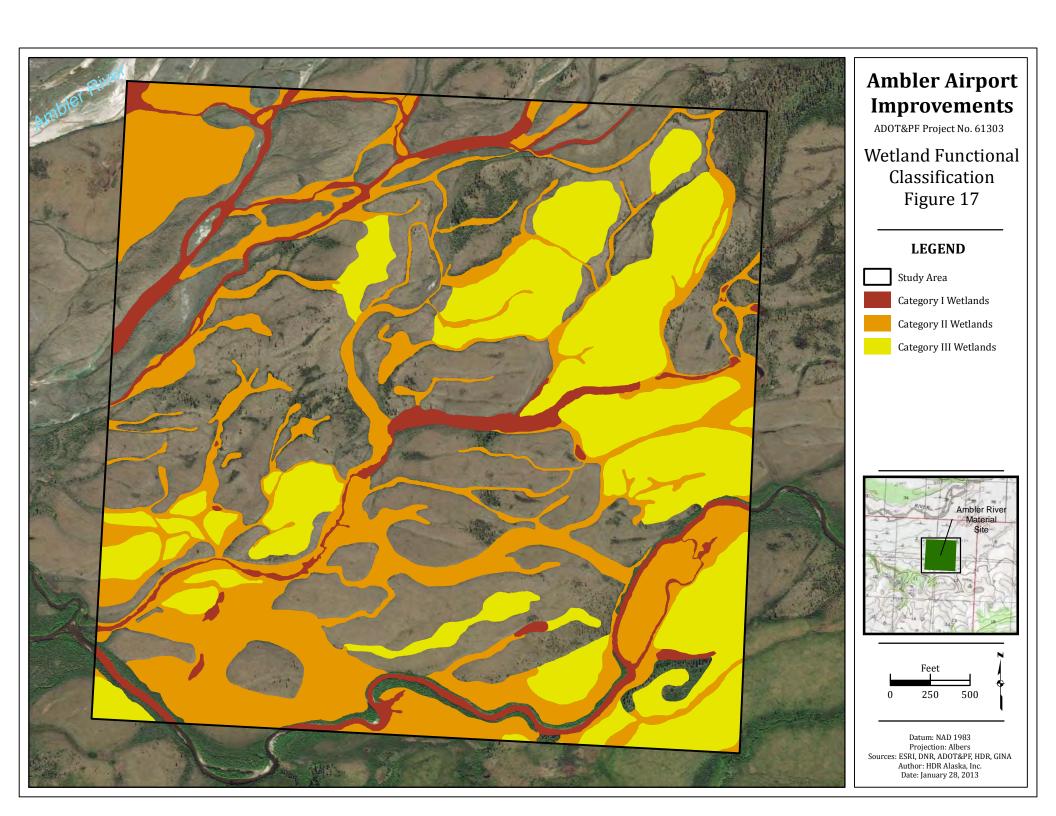












Appendix A

Wetland Determination Data Forms and Site Photographs September 6-10th, 2012

WETLAND DETERMINATION DATA FORM - Alaska Region Borough/City:____ Applicant/Owner: Investigator(s): Long. __157.867572 ± __' NAD 83 Recorded on GPS #: ___ Marked on map? __XField Map #: ___X Lat. (dec.°) 67-62513 Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: __P 55 1/FM16 Photo nos./descriptions: 86-87 sol 98-57vcq Camera #: ____ Veg Type (Viereck Level 4 or other): ____ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. Are Vegetation $\underline{\mathscr{N}}$, Soil $\underline{\mathscr{N}}$, or Hydrology $\underline{\mathscr{N}}$ significantly disturbed? Are "Normal Circumstances" present? Yes $\underline{\mathscr{N}}$ No _____ Are Vegetation $ot \mathcal{N}$, Soil $ot \mathcal{N}$, or Hydrology $ot \mathcal{N}$ naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes 🔍 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") Cov.% Dom? Ind. Species Number of Dominant Species Viz al That are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: 20% of total cover: _ 0 . 6 Prevalence Index worksheet: 50% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. **OBL** species FAC PH **FACW** species FAC species FACU species UPL + NL species Column Totals: Total Sapling/Shrub Cover: 50% of total cover: _ 40.5 20% of total cover: Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? ind. OBC 12. Hydrophytic Vegetation Indicators: OBL 14. Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 50% of total cover: 20% of total cover: Hydrophytic Vegetation Circular 1/10-ac plot ____ or other plot dimension: ___ % of bare ground: Present? % Cover of Wetland Bryophytes ______% Total Cover of Bryophytes _____% (where applicable) Remarks: Struted and water they looking

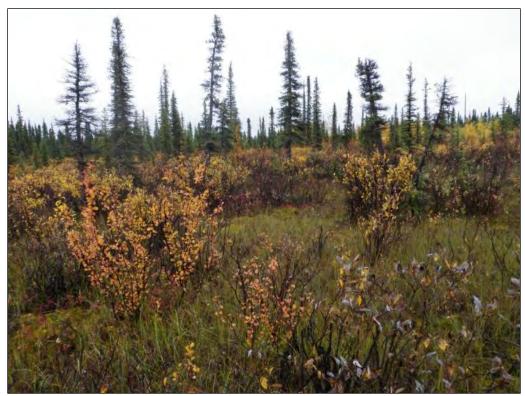
SOIL	* * * * * * * * * * * * * * * * * * * *				ampling Point #: <u># 子</u>			
Profile Description: (Describe to the depth needed to	o document the indicator	or confirm the	e absence of indicato	ors)	*			
Depth Horizon Soil Matrix	Redox Feat	ures		α,α dip.	e, e			
(in.) (opt.) Color (moist) % 4-1 Mass	Color (moist) %	Type ¹ L	_oc² Texture	(pos/ neg)	Remarks (or use comment number)			
1-0 A De								
D-16 73B 584/1 7	15412416 10	Rn R	5.1	Ŧ	7			
					· · · · · · · · · · · · · · · · · · ·			
¹ Type: C = Concentration, D = Depletion, RM = Redu	ced Matrix, CS=Coated S	and Grains ² L	 _ocation: PL = Pore	Lining, RC =	Root Channel, M = Matrix			
Hydric Soil Indicators (check ones that apply, meas								
Standard Indicators:	Indicators for Proble							
Histosol or Histel (A1) (≥16"organic surface, .				ne indicator of	hydrophytic vegetation,			
sat'd during wet period of growing season)	Alaska Color Cha	ange" (TA4)			cator of wetland			
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Alaska Alpine Sw	Alaska Alpine Swales (TA5) hydrology, and an appropriate la position must be present unless						
Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	Alaska Redox wi		⁴Gi	oroblematic. ve details of c	olor change in Remarks.			
Thick Dark Surface (A12)	Alaska Gleyed w Underlying Lay		or Redder					
Alaska Gleyed (A13)	Other (e.g., see p.							
Alaska Redox (A14)	Supplement; exp	nain in Kemark	s)					
Alaska Gleyed Pores (A15)	7	//	· · · · · · · · · · · · · · · · · · ·					
Restrictive Layer (if present)		D	_		\/			
Type: n Me	Soil Map Unit Name:		Hydric Soil Pres	ent? Yo	es No			
Depth (inches)								
1. 2. 3.	way			,				
HYDROLOGY				•··	× ×			
Wetland Hydrology Indicators (check ones that appl	v moscuro from soil cui	rfaco):	Cocondany Indicate	ro (at la sat 2				
Primary Indicators (any one indicator is sufficient)	y, measure from son sur	ilace).	Secondary Indicate		are required)			
	e Soil Cracks (B6)		Water-Stained		\$			
	ation Visible on Aerial Imag	gen/ (B7)		, , , ,	ng Roots (C3) (within 12")			
`. <u>}</u>	ely Vegetated Concave Su		Presence of R		C4)			
	eposits (B15)		Salt Deposits	(C5)				
	gen Sulfide Odor (C1) (w/i		X Stunted or Str		(D1)			
Drift Deposits (B3) Dry-Se	eason Water Table (C2) (w	v/in 24")	Geomorphic P					
	(explain)		Shallow Aquita (w/in 24", can	perch H2O w				
Iron Deposits (B5)			X FAC Neutral T	est (D5)) (caused by water) # FACU+UPL dominants)			
Field Observations (in. from ground surface):		-01	· · · · · · · · · · · · · · · · · · ·					
Surface Water Present? Yes X No	Depth of water (in.)	3						
Water Table Present? Yes X	Depth to water (in.)	0_			*			
Seeping in at that of	depth but not yet filled?:	9						
Saturation Present? Yes X No	Depth to sat. (in.)	>	Wetland Hydrolog	v Present?	Yes No			
(includes capillary fringe)	Epi Endo Unknow	/n		,,	765 —			
Describe Recorded Data (stream gauge, monitoring we			, if available:		1.1			
		/-/						
Remarks:			· · · · · · · · · · · · · · · · · · ·					
•				•				



Site 3. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 3. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 3. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.



 $Site \ 3. \ Ambler \ Airport \ Improvements \ Wetland \ Investigation. \ Facing \ South. \ Taken \ September \ 6, \ 2012.$

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler	Borough/City:	Ť		Date: 9/6/12
Applicant/Owner: DUT	bolougil/City			Sampling Point #:
Investigator(s): May 5. John J.		Firm: HD		sampling Point #:
Lat. (dec.°) 17,01345 Long.	187,8676(, ± NAD 83	Recorded on	GPS #: \/ Marked e	n man? V Field Man #
Subregion (circle one): SE Southcentral V	Vestern Aleutian Interior North	ern Landforn	n: M. Warkey o	lone (%): Aspect:
Local relief: Shape across slope: (inear / con	vex / concave Shape un/downsir	one: Jinear / cor	over / concave NWI o	Vassification: $PSSU/IV$
Photo nos./descriptions: 90-91 -50:1	92-93 Veg Ca	mera #	Ven Tyne (Viereck Leve	14 or other):
Are climatic / hydrologic conditions on the site	typical for this time of year? Yes:	No: X	If no explain	HGM type: _5/
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology				
SUMMARY OF FINDINGS			*	
Hydrophytic Vegetation Present? Yes	No			
Hydric Soil Present? Yes	No withi	sampled area n a wetland?	Yes No	
Wetland Hydrology Present? Yes	No		Remarks (e.g., margi	— inal?):
VEGETATION (Use scientific names.) Estin	nate absolute % cover (not relative	cover). % can t		
Tree Stratum (dbh≥ 3")			Dominance Test work	
Species Cov.% Dom? Ind.	Species Cov.% Do	m? Ind.	Number of Dominant Si	pecies //
1. Picmar 3 X FAW	5		That are OBL, FACW, o	
2	6.		Total Number of Domin	ant
3	7		Species Across All Stra	ta: <u> </u>
4	8		Percent of Dominant Sp	pecies
Total Tree of			That are OBL, FACW, o	or FAC: 106 / (A/
30 % of total cover.	20 % Of total cover.	.6	Prevalence Index worl	ksheet:
Sapling/Shrub Stratum (woody plants < 3" dl Abs.Cov.% Dom? Ind.			Total % Cover of	
	7. Vaccaka	m? Ind.	OBL species	3 X1= 3
	8. Emphila	- <u>FAC</u>	FACW species3	5 x2= 70
3. Leddec 4 FALW		FAC	FAC species5	59 x3= 177
4. Vacc whi 15 X CAC 1	0. And pol 2	PHOW	FACU species	7 X4= 28
	1		UPL + NL species	X5=
6. fos no:) PHO 1	2	<u> </u>	Column Totals: 10	<u>4 (A) 278 (E</u>
Total Sapling/Shrub (Cover: <u>66</u>	7 7		
50% of total cover:33	20% of total cover:/	3,2	Prevalence Index =	B/A = 2.67
Herb Stratum				·
Abs.Cov.% Dom? Ind.	Abs. Cov.% Do	m? Ind.		.a.,
	3	— <u> </u>	Hydrophytic Vegetatio	n Indicators:
3. Pet fri 1 FACW1	4	_ 0	Dominance Test	
4. Col can 3 FAC 1	5.		Prevalence Index	c is ≤3.0
5. Lau sci d FACU 1	6. <u></u>		Morphological Ac	daptations ¹ (Provide supportir
1 0. Cor 514 00 A 115 1	/		data in Remark	s or on a separate sheet)
	8		Problematic Hydi	rophytic Vegetation¹ (Explain)
	9			
10 2	1		Indicators of hydric soi	I and wetland hydrology must
11 2	2		be present unless distur	bed or problematic.
Total Herb C	over: <u>35</u>			
1	20% of total cover:	1	Hydrophytic	
Circular 1/10-ac plotor other plot dimen	sion: % of bare grour	nd: (2)	Vegetation Yes	S No
% Cover of Wetland Bryophytes	% Total Cover of Bryophytes	%	Present?	
(where applicable) Remarks:	7D &			
fewer mong	10 ° 0			
Syphagum ") %			

Fype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = ydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in tandard Indicators: Histosol or Histel (A1) (2:16*organic surface, sard during wet period of growing season) Histic Epipedon (A2) (8-16* organics, sard, underlain by mineral soil with othroma s2) Hydrogen Suffide (A4) (within 12*orground surface; @ in this pit Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Redox (A14) Salaska Gleyed Pores (A15) Sestrictive Layer (if present) Type: Depth (inches) Drainage Class: Drainage Class: Fig. Soil Map Unit Name: Hydric Soil Hydric Soil Hydric Soil Fig. Water-Stale (A1) Surface Water (A1)	α,α dip. (pos/ Remarks neg) (or use comment number 2 0%) A patches of argo 2 0% = Pore Lining, RC = Root Channel, M = Matr
Color (moist) Color (moist	Remarks neg) A partches of orgo Remarks (or use comment number) A partches of orgo Remarks (or use comment number) A partches of orgo Remarks (or use comment number) A partches of orgo Remarks (or use comment number)
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ²Location: PL = dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in andard Indicators: Indicator for Problematic Hydric Soils²: Indicators for Problematic Hydric Soils²: Alaska Color Change⁴ (TA4) Histicos of Histel (A1) (2-16°organics, sard, underlain by mineral soil with chroma s2) Hydrogen Sulfide (A4) (within 12°d ground surface, @ _ 'in this pit Thick Dark Surface (A12)	e Pore Lining, RC = Root Channel, M = Matrinoted):
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = rdric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators in Ptistel (A1) (216'organic surface, sard during wet period of growing season) Histics Epipedon (A2) (8-16' organics sard, underlain by mineral soil with chroma s2) underlain by mineral soil with chroma s2). Histic Epipedon (A2) (8-16' organics, sard, underlain by mineral soil with chroma s2). High General Physics (A4) (within 12' of ground surface, and in the property of th	= Pore Lining, RC = Root Channel, M = Matr noted):
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators for Problematic Hydric Soils*: Histosol or Histel (A1) (a:16*organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (a:16* organics, sat'd, underlain by mineral soil with chroma s2)	= Pore Lining, RC = Root Channel, M = Matr noted):
ppe: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in andard Indicators: Histosol or Histel (A1) (≥16°organic surface, sat'd during wet period of growing season) Histic 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 Thick Dark Surface (A12)	= Pore Lining, RC = Root Channel, M = Matr noted):
pe: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators for Problematic Hydric Soils ³ : Histosol or Histel (A1) (≥16°organics surface, sai'd during wet period of growing season) Histic Epipedon (A2) (8-16° organics, sat'd, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12°0 ground surface; @ in this pit	= Pore Lining, RC = Root Channel, M = Matr noted):
ppe: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in andard Indicators: Histosol or Histel (A1) (≥16°organic surface, sat'd during wet period of growing season) Histic 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 Thick Dark Surface (A12)	= Pore Lining, RC = Root Channel, M = Matr noted):
dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators: Histosol or Histel (A1) (2:16*organic surface, said during wet period of growing season) Histic Epipedon (A2) (8-16* organics, said, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12*organic surface); Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Thick Dark Surface (A13) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement, explain in Remarks) Drainage Class: For Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A2) (wiin 12*) Surface Water (A2) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Secondary In Indicators (B8) Presence (pos. a, see P.91 of 2007 Supplement, explain in Remarks) Secondary In Water Table (A2) (wiin 12*) Saturation (A3) (wiin 12*) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, see P.91 of 2007 Surface Water (A1) Surface Water (A1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Underlying Layer Underlying Layer Dother (e.g., see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Hydric Soil Water Si Water Si Secondary In Marker (B1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, and the supplement, explain in Remarks) Secondary In Marker (B1) Secondary In M	= Pore Lining, RC = Root Channel, M = Matr noted): 3One indicator of hydrophytic vegetation,
dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators: Histosol or Histel (A1) (≥16° organic surface, said during wet period of growing season). Histic Epipedon (A2) (8-16° organics, said, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12° of ground surface; @ in this pit Thick Dark Surface (A12)	noted): 3One indicator of hydrophytic vegetation,
dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators: Histosol or Histel (A1) (2:16*organic surface, said during wet period of growing season) Histic Epipedon (A2) (8-16* organics, said, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12*organic surface); Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Thick Dark Surface (A13) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement, explain in Remarks) Drainage Class: For Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A2) (wiin 12*) Surface Water (A2) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Secondary In Indicators (B8) Presence (pos. a, see P.91 of 2007 Supplement, explain in Remarks) Secondary In Water Table (A2) (wiin 12*) Saturation (A3) (wiin 12*) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, see P.91 of 2007 Surface Water (A1) Surface Water (A1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Underlying Layer Underlying Layer Dother (e.g., see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Hydric Soil Water Si Water Si Secondary In Marker (B1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, and the supplement, explain in Remarks) Secondary In Marker (B1) Secondary In M	noted): 3One indicator of hydrophytic vegetation,
Inic Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in mard indicators: Histosol or Histel (A1) (≥16° organic surface, sat'd during wet period of growing season). Histic Epipedon (A2) (e.16° organics, sat'd, underlain by mineral soil with chroma ≤2 underlain by mineral soil with chroma ≤2 underlain by mineral soil with chroma ≤2 underlain by mineral soil with othroma ≤2 underlain by mineral soil with spit underlain by mineral soil with othroma ≤2 underlain by mineral soil with othroma ≤2 underlain by mineral soil with othroma ≤2 underlain by mineral soil without Hue 5Y or Redder Underlying Layer Underlying	noted): 3One indicator of hydrophytic vegetation,
dric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise in Indicators: Histosol or Histel (A1) (2:16*organic surface, said during wet period of growing season) Histic Epipedon (A2) (8-16* organics, said, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12*organic surface); Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Thick Dark Surface (A13) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement, explain in Remarks) Drainage Class: For Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A2) (wiin 12*) Surface Water (A2) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Saturation (A3) (wiin 12*) Secondary In Indicators (B8) Presence (pos. a, see P.91 of 2007 Supplement, explain in Remarks) Secondary In Water Table (A2) (wiin 12*) Saturation (A3) (wiin 12*) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, see P.91 of 2007 Surface Water (A1) Surface Water (A1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Underlying Layer Underlying Layer Dother (e.g., see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Hydric Soil Water Si Water Si Secondary In Marker (B1) Surface Water (A1) Sparsely Vegetated Concave Surface (B8) Presence (pos. a, and the supplement, explain in Remarks) Secondary In Marker (B1) Secondary In M	noted): 3One indicator of hydrophytic vegetation,
Indicators for Problematic Hydric Soils. Histosol or Histel (A1) (≥16°organic surface, sard during wet period of growing season) Histic Epipedon (A2) (e-16° organics, sard, underlain by mineral soil with chroma ≤2) Hydrogen Sulfidie (A4) (within 12°orground surface; @in this pit Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement, explain in Remarks) Strictive Layer (if present) Type: //OVE Soil Map Unit Name: Hydric Soil PROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Indicators (check ones that apply, measure from soil surface): BROLOGY Itand Hydrology Ind	³ One indicator of hydrophytic vegetation,
Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16* organics, sat'd, underlain by mineral soil with chroma s2) Hydrogen Sulfide (A4) (within 12*of ground surface; @ in this pit Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Alaska Gleyed (A13) Alaska Gleyed Pores (A15) Strictive Layer (if present) Type:	, , , , ,
Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16* organics, sat'd, underlain by mineral soil with chroma s2) Hydrogen Sulfide (A4) (within 12*of ground surface; @ in this pit Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Alaska Gleyed (A13) Alaska Gleyed Pores (A15) Strictive Layer (if present) Type:	, , , , ,
Histic Epipedon (A2) (8-16" organics, safd, underlain by mineral soil with chroma s21, and evaluation by mineral soil with chroma s22, and evaluation	, , , , ,
Underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (AA) (within 12'of ground surface; @ in this pit Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Alaska Gleyed (A13) Alaska Gleyed Pores (A14) Alaska Gleyed Pores (A15) Strictive Layer (if present) Injury Experiments: Drainage Class: Drainage Class: Drainage Class: Properiments: Drainage Class: Drainage Class: Properiments: Drainage Class: Drainage Class: Properiments: Water-Strictive Layer (if present) Soil Map Unit Name: Water-Strictive Layer (A1) Surface Water (A1) Surface Soil Cracks (B6) Drainage Drainage Secondary Intervention of the present of	
Hydrogen Sulfide (AA) (within 12'of ground surface; @ 'in this pit	hydrology, and an appropriate landscape position must be present unless disturbed
Surface; @ * in this pit	or problematic.
	⁴ Give details of color change in Remarks
Alaska Gleyed (A13)Alaska Redox (A14)Alaska Redox (A14)Alaska Gleyed Pores (A15) strictive Layer (if present) Type:	
Alaska Redox (A14) Alaska Gleyed Pores (A15) Strictive Layer (if present) Type: Pepth (inches) MROLOGY Soil Map Unit Name: Mydric Soil Hydric Soil Fig. Soil Map Unit Name: Hydric Soil Hydric Soil Hydric Soil Hydric Soil Fig. Soil Map Unit Name: Hydric Soil Hydric Soil Hydric Soil Fig. Soil Map Unit Name: Hydric Soil Hydric Soil Hydric Soil Hydric Soil Fig. Soil Map Unit Name: Hydric Soil Fig. Secondary In Water-St Water-St Drainage Oxid'd R Secondary In Water-St Drainage (P) Water-St Drainage Oxid'd R Secondary In Wate	
Secondary Interpretation (Inches) Soil Map Unit Name: Hydric Soil Map Unit Name: Mydric Soil Secondary In Mydric Soil Surface): Mydric Soil Cracks (B6) Secondary In Mydric Soil Cracks (B6) Secondary In Mydric Soil Cracks (B6) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Secondary In Mydric Soil Unit Name: Mydric Soil Cracks (B6) Secondary In Mydric Soil Mydric Soil Cracks (B6) Secondary In Mydric Soil Mydric Soi	
Soil Map Unit Name: Hydric Soil	
PROLOGY Interpret (inches)	× × ×
PROLOGY Interest (Secondary Indicators) Interest (Secondary Indicators) Interest (Surface Water (A1)	oil Present? Yes No
### Actional Hydrology Indicators (check ones that apply, measure from soil surface): Mary Indicators (any one indicator is sufficient)	
Secondary Indicators (check ones that apply, measure from soil surface): imary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Indicators (check ones that apply, measure from soil surface): Water Staturation (A3) (win 12") Surface Soil Cracks (B6) Surface Soil Cracks (B6) Drainage Oxid'd R Presence (pos. or. Salt Dep Sediment Deposits (B1) Surface Soil Cracks (B6) Surface (B8) Sparsely Vegetated Concave Surface (B8) Surface (Day Indicators) Sparsely Vegetated Concave Surface (B8) Su	
### Architecture of the companies of the	
Secondary Indicators (check ones that apply, measure from soil surface): mary Indicators (any one indicator is sufficient) Surface Water (A1)	·
mary Indicators (any one indicator is sufficient) Water-St Surface Water (A1) Surface Soil Cracks (B6) Drainage High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7) Oxid'd R Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Presence (pos. α, Salt Dep Water Marks (B1) Marl Deposits (B15) Salt Dep Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Stunted (w/in 12") Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Geomorg Shallow (w/in 24") Algal Mat or Crust (B4) Other (explain) Microtop In Deposits (B5) Microtop FAC Net (# OBL4) Id Observations (in. from ground surface): Depth of water (in.) Calc (# OBL4) Ide Observations (in. from ground surface): Depth of water (in.) Depth of water (in.)	lidina (all line)
Surface Water (A1) Surface Soil Cracks (B6) Drainage High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7) Oxid'd R Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Marl Deposits (B15) Salt Dep Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Stunted (C2) (w/in 24") Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Geomore Algal Mat or Crust (B4) Other (explain) Microtop FAC Net (# OBL4) d Observations (in. from ground surface): face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	Indicators (at least 2 are required)
High Water Table (A2) (w/in 12")	Stained Leaves (B9)
Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Sediment Deposits (B2) Dry-Season Water Table (C2) (w/in 12") Algal Mat or Crust (B4) Iron Deposits (B5) Other (explain) Other (explain) Other (explain) Algal Mater Table (C2) (w/in 24") FAC Net (# OBL4) Other Water Present? Yes No Depth of water (in.) Presence (pos. a. Salt Dep Stunted (C2) (w/in 12") Stunted (C2) (w/in 24") Shallow (w/in 24") FAC Net (# OBL4)	ge Patterns (B10)
Water Marks (B1)	Rhizospheres on Living Roots (C3) (within 12"
Water Marks (B1)	ce of Reduced Iron (C4) a,a or soil color change w/in 12")
Sediment Deposits (B2)Hydrogen Sulfide Odor (C1) (w/in 12") Stunted of Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Geomorphic Shallow (w/in 24") Shallow (w/in 24") Shallow (w/in 24") Microtophic Shallow (w/in 24")	eposits (C5)
Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Geomorp	d or Stressed Plants (D1)
Algal Mat or Crust (B4)	orphic Position (D2)
(Win 24) Iron Deposits (B5) # FAC Net (# OBL4) d Observations (in. from ground surface): face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	v Aquitard (D3)
# FAC Net (# OBL+ d Observations (in. from ground surface): face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	4", can perch H2O w/in 12")
# OBL4 Id Observations (in. from ground surface): face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	ppographic Relief (D4) (caused by water)
ld Observations (in. from ground surface): face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	eutral Test (D5)
face Water Present? Yes No Depth of water (in.) ter Table Present? Yes No Depth to water (in.)	L+FACW dominants > # FACU+UPL dominants)
ter Table Present? Yes 🔀 No Depth to water (in.)	
Seeping in at that depth but not vet filled?	
Find in an area about and for integer	•
uration Present? Yes 🔀 No Depth to sat. (in.) Wetland Hyd	ydrology Present? Yes No
cludes capillary fringe) Epi Endo Unknown	
scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
marks:	

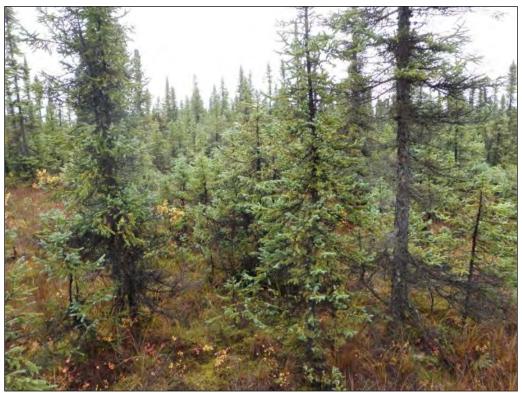


Site 4. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.





Site 4. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.



Site 4. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

A 17 A logarithment of the second of the sec	en e
Project: Hubba Hirput Borough/City: Mutruta	
Applicant/Owner: 007	Sampling Point #: Z
	IDR Alaska, Inc.
Lat. (dec.°) 67(9583 Long. 157.86707 ± NAD 83 Recorded or	n GPS #: 📈 Marked on map? 🔀 Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfor	
Local relief: Shape across slope: dinear / convex / concave Shape up/downslope: linear / convex / concave	
Photo nos./descriptions: 97-99 5wl 100-101 veg Camera #:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: ×	
Are Vegetation 4. Soil 4., or Hydrology 1 significantly disturbed? Are "Normal Circu	
Are Vegetation, Soil, or Hydrology naturally problematic? If needed, explain a	answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No Is the sampled are	a
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	
<u>Tree Stratum</u> (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Vic a/a 20 X FACV 5.	That are OBL, FACW, or FAC:(A)
2. Non tran 10 FACU 6.	Total Number of Dominant
3	Species Across All Strata:(B)
Total Tree Cover: 36	Percent of Dominant Species
16	That are OBL, FACW, or FAC: Prevalence Index worksheet:
2070 01 total 00001.	
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Vecc y 20 X FAC 7. Porte 5 FACU	OBL species X1=
2. S. I rill 15 X FACN 8. Led doc 3 FACN	FACW species X2= X2=
3. She can 2 FACU 9.	FAC species X3=X
4. Vac vit 15 x FAC 10.	FACU species <u>37</u> X4= <u>148</u>
5. Eng nig 10 FAC 11	UPL + NL species3
6. Arc rub 1 FACW12.	Column Totals:(A)
Total Sapling/Shrub Cover:	Provisiones Index - P/A - 3 · 24
50% of total cover: 35.5 20% of total cover: 14.2	Prevalence Index = B/A =
Herb Stratum	er Sont in the second of the
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	•
2. Cal can ID X FAC 13.	Hydrophytic Vegetation Indicators:
3. Garge Sp. 2 NL 14.	Dominance Test is>50%
4. Lyc com 1 UPL 15.	No Prevalence Index is ≤3.0
5 16	Morphological Adaptations¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19	Serve feet 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
9 20 10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 15	
50% of total cover: 7.5 20% of total cover: 3.0	Hydrophytic V
Circular 1/10-ac plot or other plot dimension: % of bare ground: 20	Vegetation Yes No
% or bare ground: 20 %	Present?
(where applicable)	
Remarks: Veas 30-40' horh	

SOIL										Sampling Point #:
Profile D	escription	: (Describe to the de	pth neede	d to document the i	ndicator	r or confirm	the abse	nce of indicate	ors)	
Depth	Horizon	Soil Matrix		Rec	dox Fea	itures			a,a dip.	•
<u>(in.)</u>	<u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	<u>Loc²</u>	Texture	(pos/ neg)	Remarks (or use comment number)
2-0	Moss			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- <u> </u>		<u> </u>			
0-3	A	104212		<u> </u>		·				pah percebus storger
3-8	BI	25411	40	754844				5.		
9-16	<u>B</u> 2	7.51(4/4 107K3/3	60					Sil	styr. dala aa r	
¹Type: C	= Concent	ration, D = Depletion	, RM = Re	duced Matrix, CS=0	Coated S	Sand Grain	s ² Locatio	on: PL = Pore	Lining, RC	= Root Channel, M = Matrix
Hydric S	oil Indicato	ors (check ones that	apply, me	easure from top of	minera	l layers un	less oth	erwise noted)	:	
Standard	d Indicators	:		Indicators fo	r Probl	ematic Hyd	dric Soils	s ³ :		
His	tosol or Hist	el (A1) (≥16"organic	surface,			hange⁴ (TA			e indicator	of hydrophytic vegetation,
His	tic Epipedor	vet period of growing se n (A2) (8-16" organics	, sat'd,			Swales (TA		hyd	rology, and	dicator of wetland I an appropriate landscape be present unless disturbed
Hyd	rogen Sulfic	mineral soil with chrom de (A4) (within 12"of " in this pit	•		·	vith 2.5Y H	,	orp	roblematic	· ·
	ck Dark Sur				Gleyed v	without Hue	e 5Y or R	edder		
Ala	ska Gleyed	(A13)				o.91 of 2007				
Ala	ska Redox (A14)				plain in Rem	narks)			
Ala	ska Gleyed	Pores (A15)		1.3						
Restrictiv	e Layer (if p	resent)		Drainage Clas	ss:	wD				
Type:	* <u>*</u>	Well harned		Soil Map Unit	Name:		Hy	dric Soil Pres	ent?	Yes No
Depth	(inches) _	11me								
Commen 1. 2. 3.	X	- 1		§ 1.						
HYDROL	OGY									
Wetland	Hydrology	Indicators (check o	nes that ar	oply, measure fron	ı soil sı	urface):	Seco	ondary Indicate	rs (at least	2 are required)
		any one indicator is					4	Water-Stained	Leaves (B	9) .
-	ice Water (A	•		ace Soil Cracks (Be	,			Drainage Patte		
1	Water Table ation (A3) (e (A2) (w/in 12") w/in 12")		idation Visible on A rsely Vegetated Co		/	. T	Presence of R	educed Iror	iving Roots (C3) (within 12") n (C4) nange w/in 12")
_	r Marks (B1 nent Depos		. —	l Deposits (B15) rogen Sulfide Odor	(C1) (w	/in 12"\	7	Salt Deposits (Stunted or Stre	C5)	* x*
1	Deposits (B			Season Water Tab		•		Geomorphic P		
1	Mat or Crus			er (explain)	(/	(······ = ·)		Shallow Aquita (w/in 24", can	ırd (D3)	
Iron I	Deposits (B5	5)						FAC Neutral T	est (D5)	D4) (caused by water)
Field Ohe	ervations (ir	n. from ground surfa	ce):					(# UDLTFACV	, aorminants	> # FACU+UPL dominants)
	Vater Presei			_ Depth of wate	er (in.)					
	ble Present?		No 🗴	_ Depth to wate						
			V	at depth but not yet						
Saturation	n Present?	Yes	No				Weti	and Hydrolog	v Present	? Yes No
	capillary frin				Unkno		1	ana myarolog	i, rodent	. 100 140
		ata (stream gauge, i	nonitoring	•			ons), if av	ailable:		
		(33-1		,			-/,			
Remarks:	·									
			. 4							



Site 7. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 7. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 7. Ambler Airport Improvements Wetland Investigation. Facing West. Taken September 25, 2012.



Site 7. Ambler Airport Improvements Wetland Investigation. Facing East. Taken September 25, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region Project: Borough/City: Applicant/Owner: Sampling Point #: Investigator(s): Firm: HDR Alaska, Inc. 157.4597 ± NAD 83 Recorded on GPS#: Y Marked on map? Field Map #: 09940 Long. Subregion (circle one): SE Southcentral Western Aleutian Intenor Northern Landform: North Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Photo nos./descriptions: 102-103 501 104-105 Veg Camera #: Veg Type (Viereck Level 4 or other): Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. HGM type: -Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 🔀 No Are Vegetation ____, Soil _____, or Hydrology ____ naturally problematic? If needed, explain answers here. 15/10/1/25pan SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area No X Hydric Soil Present? Yes within a wetland? Yes _ No X Wetland Hydrology Present? Yes 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") Cov.% Dom? Ind. Species Species Cov.% Dom? Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Abs.Cov.% Dom? Ind Abs.Cov.% Dom? Ind. **OBL** species FACU 7. FACW species FACW 8. FAC species FAC 10. FACU species UPL + NL species Column Totals: Total Sapling/Shrub Cover: 50% of total cover: ____ 47.5 20% of total cover: Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? Abs. Cov.% Dom? Ind. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 8 Total Herb Cover: 20% of total cover: __ 1 . 6 50% of total cover: Hydrophytic Vegetation Circular 1/10-ac plot ____ or other plot dimension: ___ ______ % of bare ground: _30 Present? % Cover of Wetland Bryophytes ______ % Total Cover of Bryophytes _____ % (where applicable) Remarks: 1 when (white) 5%

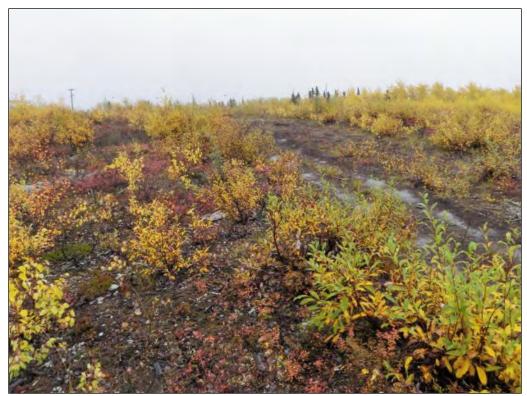
Proper Concentration, December 2007 Property Property Proposition Property P	Depth Horizon Soil Matrix Redox Features (in.) (opt.) Color (moist) % Color (moist) % Type¹ Life Depth Horizon Color (moist) % Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Color (moist) % Type¹ Life Depth Horizon Color (moist) % Type¹ Life Color (moist) % Type¹ Life Life Life Life Life Depth Horizon Color (moist) % Type¹ Life Li	α,α dip. (pos/ neg) Remarks (or use comment number) 2 Location: PL = Pore Lining, RC = Root Channel, M = Matrices of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. 3 One Redder 4 Give details of color change in Remarks 5 Y or Redder
(in) (oet.) Color (moist) % Color (moist) % Tyce Loc Texture (post Remarks 2 Loc Life (post Rema	(in.) (opt.) Color (moist) % Color (moist) % Type¹ 2-1 Life	Loc² Texture (pos/ neg) Texture (pos/ neg) Color is a matrix (or use comment number) Location: PL = Pore Lining, RC = Root Channel, M = Matrix ses otherwise noted): Ic Soils³: 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. 4 Give details of color change in Remarks (SY or Redder)
Comment Comm	BI IDYRUIL TOTAL	2-Location: PL = Pore Lining, RC = Root Channel, M = Matrices otherwise noted): ic Soils³: 3 One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. 3 Give details of color change in Remarks of Y or Redder
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Mydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Indicators for Problematic Hydric Soils*: V	Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains Sydric Soil Indicators (check ones that apply, measure from top of mineral layers unler Standard Indicators: Histosol or Histel (A1) (≥16° organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16° organics, sat'd, underlain by mineral soil with chroma s2) Hydrogen Sulfide (A4) (within 12° of ground surface; @* in this pit Thick Dark Surface (A12)	² Location: PL = Pore Lining, RC = Root Channel, M = Materials of Soils ³ : ³ One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. ⁴ Give details of color change in Remarks of Y or Redder
E	DYRUG B DYRUG TO Supplement; explain in Remark Soil Map Unit Name:	2Location: PL = Pore Lining, RC = Root Channel, M = Matrices otherwise noted): ic Soils³: 3One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. 4Give details of color change in Remarks 5Y or Redder
yee: C = Concentration, D = Depletion, RM = Reduced Matrix. CS=Coated Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = M yer frout Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Alaska Color Change* (TA4) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during wel period of growing season) Histosol of Histel (A1) (a16*organic surface, set of during season) Histosol of Histel (A1) (a16*organic surface, set of during season) Alaska Color Change* (TA4) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Underlying Layer Underlying Layer Other (e.g. see p.9 to /2007 Supplement, explain in Remarks) Drainage Class: Oral Map Unit Name: Hydric Soil Present? Yes	Pype: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains and Grains (check ones that apply, measure from top of mineral layers unless and Indicators: Histosol or Histel (A1) (≥16*organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16* organics, sat'd, underlain by mineral soll with chroma ≤2) Hydrogen Sulfide (A4) (within 12*of ground surface; @* in this pit Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15) Pestrictive Layer (if present) Type:	2Location: PL = Pore Lining, RC = Root Channel, M = Matrices otherwise noted): ic Soils³: 3One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbe or problematic. 4Give details of color change in Remarks 5Y or Redder
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DROLOGY etland Hydrology Indicators (check ones that apply, measure from soil surface): imary Indicators (any one indicator is sufficient) Surface Water (A1)	and the second s	
PROLOGY Verland Hydrology Indicators (check ones that apply, measure from soil surface): Verland Hydrology Indicators (check ones that apply, measure from soil surface): Verland Hydrology Indicators (any one indicator is sufficient) Verland Water (A1) Verland Water (A2) Verland Water (A3) Verland Water (A3) (Win 12") Verland Water Marks (B1) Verland Marl Deposits (B5) Verland Marl Deposits (B5) Verland Marl Deposits (B3) Verland Marl Deposits (B4) Verland Marl Deposits (B5) Verland Marl	omments:	
Ves	/ Vetland Hydrology Indicators (check ones that apply, measure from soil surface): rimary Indicators (any one indicator is sufficient) // Surface Water (A1) // Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") // Inundation Visible on Aerial Imagery (B7) Saturation (A3) (w/in 12") // Sparsely Vegetated Concave Surface (B8) Water Marks (B1) // Marl Deposits (B15) Sediment Deposits (B2) // Hydrogen Sulfide Odor (C1) (w/in 12") Drift Deposits (B3) // Dry-Season Water Table (C2) (w/in 24") Algal Mat or Crust (B4) // Other (explain)	Water-Stained Leaves (B9) Drainage Patterns (B10) Oxid'd Rhizospheres on Living Roots (C3) (within 12') Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12") Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water)
rater Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled?: aturation Present? Yes No Depth to sat. (in.) Below Epi Endo Unknown Wetland Hydrology Present? Yes No		
Seeping in at that depth but not yet filled?: atturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No		
aturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No N		W. 74
cludes capillary fringe) Epi Endo Unknown	Seeping in at that depth but not yet filled?:	
	aturation Present? Yes No X Depth to sat. (in.)	Wetland Hydrology Present? Yes No
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
	scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection	s), if available:
marks:	marke.	



Site 8. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 8. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 8. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.



Site 8. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 6, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

21. And on 4	le colonia
Project: Ambler Arport Borough/City: NW Ac	
Applicant/Owner: DOT	Sampling Point #: 12
	DR Alaska, Inc.
Lat. (dec.°) 67.097+4 Long. 1578665 ± NAD 83 Recorded or	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfor	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / co	onvex / concave NWI classification:
Photo nos./descriptions: 112-113 Soil 114-115 wag Camera #:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation A Soil K , or Hydrology K significantly disturbed? Are "Normal Circuitation Are "Normal Circuitation".	
Are Vegetation \mathcal{N} Soil \mathcal{N} , or Hydrology \mathcal{N} naturally problematic? If needed, explain a	answers here.
SUMMARY OF FINDINGS Open white spruce &	orest
Hydrophytic Vegetation Present? Yes Yes No Is the sampled are:	
Hydric Soil Present? Yes No _X Is the sampled area within a wetland?	Yes No 🗡
Wetland Hydrology Present? Yes No X	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")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Pz zlau 15 2 FACU 5.	That are OBL, FACW, or FAC: (A)
2	Total Number of Dominant
3	Species Across All Strata:
4 8	Percent of Dominant Species
Total Tree Cover: 15	That are OBL, FACW, or FAC: (A/B)
50% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
1. Vecc Let 10 FAC 7. For non 5 FAC 2. Voca uli 55 X FAC 8. Solonal 2 FAC	FACW species 10 X2= Z 5
2. Vacy uli 55 X FAC 8. Sal mul 2 FAC 9. PR 66 5 FACU	FAC species 153 x3= 459
4. Kos aci 5 FACU10 Patthy T	FACU species 25 X4= /00
5. Led dec 10 FACW11.	UPL + NL species 2
6. Betglan 45 x FAC 12.	190
Total Sapling/Shrub Cover: 158	Column I otals: 1/0 (A)
50% of total cover: 79 20% of total cover: 31.6	Prevalence Index = B/A = 3.10
Herb Stratum	Prevalence Index = B/A =
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Cal can 10 X FAC 12.	Hydrophytic Vegetation Indicators:
2. Mor pan 2 200 10 113. 100 100 100 100 100 100 100 100 100 10	
3. Car ha 5 7 A FAC 14:	Dominance Test is>50% No Prevalence Index is ≤3.0
4 15 15.	
5.	Morphological Adaptations¹ (Provide supporting
718	data in Remarks or on a separate sheet)
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20 20	to A control of the c
10 21	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 17	San
50% of total cover: 8.5 20% of total cover: 3.4	Hydrophytic () () () () () () () () () (
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	· resoliti
(where applicable) Remarks: Tr 44 44	
Remarks: Feether Mars	

SOIL				*				Sampling Point #:
Profile Descripti	on: (Describe to the de	epth needed	to document the	indicator or con	firm the a	bsence of indicate	ors)	
Depth Horizoi	Soil Matrix	<u> </u>	Re	dox Features			α,α dip.	· ·
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>% Type</u>	1 Loc	² Texture	(pos/	Remarks
1001	<u> </u>		SOIOT TIMOIOTA	<u> </u>			<u>neg)</u>	(or use comment number)
700								
10-0 UI	AND CONTRACTOR		Paye				***************************************	
5.76				· ; <u>*</u>				<u> </u>
10-10 B	2.5Y.5/L	80% _	, Edward March	and the second s			Supplementally and the second	Megatile or
	<u> 54634 </u>	<u> 204 </u>	. 6			_	·	
			eli ya kusali	·	5.%			
							· · · · · · · · · · · · · · · · · · ·	
-	·		7 37 3	· ·	- :			
¹Type: C = Conce	entration D = Depletion	DM - Pod	load Matrix CS-	Costed Sand G	rains ² l oc	ation: BL = Boro	Lining BC -	Root Channel, M = Matrix
								Root Channel, W - Wathx
	ators (check ones that	t apply, meas	化二氯化二氯化二氯化二氯化二氯	trive in the first term of the contract of th			:	
Standard Indicat	ors:		Indicators fo	or Problematic	Hydric S	oils³:		· A
	listel (A1) (≥16"organic		Alaska	Color Change⁴	(TA4)			f hydrophytic vegetation,
	ng wet period of growing se				A 14			cator of wetland in appropriate landscape
	don (A2) (8-16" organics by mineral soil with chrom		Alaska	Alpine Swales (TA5)			present unless disturbed
	ulfide (A4) (within 12"of					or r	problematic.	The second of th
surface; @	n this pit	giouna	Alaska	Redox with 2.5	Hue	⁴Gi	ve details of	color change in Remarks.
Thick Dark S	Surface (A12)			Gleyed without	Hue 5Y o	r Redder		a particular and a second
Alaska Gleye				erlying Layer				•
-	· · ·			e.g., see p.91 of 20 ement; explain in I				
Alaska Redo	` ′		Сиррк	ement, explain in t	(cinains)			
	ed Pores (A15)							
Restrictive Layer (if present)		Drainage Cla	ss: ZUWI)			
Type:	NONE		Soil Map Unit	Name:		Hydric Soil Pres	ent? Y	'es No <u>X</u>
Depth (inches)							
Comments:				Test of		J. 1944. J. A. W.	-	1 1 20
1. negative	alphy alpha		it. Kilopadi eksilik		. Paragali			
 3. 						IAS I		
HYDROLOGY						- 1		
	gy Indicators (check o	100	ly, measure fron	n soil surface):	: <u></u>	econdary Indicate		
*	(any one indicator is				3 P	<u>M</u> Water-Stained	the entrace of	A
Nurface Water	r (A1)	Surfac	e Soil Cracks (B	6)		🛕 Drainage Patte	erns (B10)	
High Water Ta	able (A2) (w/in 12")	Inunda	ation Visible on A	erial Imagery (E	37)			ing Roots (C3) (within 12")
Saturation (A3	3) (w/in 12")	Sparse	ely Vegetated Co	ncave Surface	(B8) -	Presence of R		
Water Marks (eposits (B15)	•		pos. α,α or: Salt Deposits		nge w/in 12")
Sediment Dep	·		gen Sulfide Odor	: · (C1) (w/in 12")	_	Stunted or Str		(D1)
Drift Deposits		4 / 1	eason Water Tab		n/		100000000000000000000000000000000000000	
Dim Deposits	(D3)	Diy-Se	ason vvaler rad	ne (C2) (W/III 24) _	Geomorphic P		may year that a may a
Algal Mat or C	rust (B4)	Other	(explain)		_	Shallow Aquita // (w/in 24", can		//in 12")
Iron Deposits	(B5)	of the second		*			•	1) (caused by water)
unga -in w			•		7	FAC Neutral T		i) (oddood by water)
				<u> </u>	<u></u>			# FACU+UPL dominants)
Field Observations	(in. from ground surfa	ce):		*				
Surface Water Pre	sent? Yes	No	Depth of wate	er (in.)				
Water Table Prese	ent? Yes <u>×</u>	No	Depth to wate	er (in.) <u>16</u>		3.75 2.45		
			depth but not yet					
Saturation Present		No No	Depth to sat.	-	- I	Vetland Hydrolog	w Dracanto	Yes No
		140				renanu myurolog	y Fresent?	105 NO <u>#.\$</u>
(includes capillary	iringe). d Data (stream gauge, i	monitorina	·	Unknown	otions) if	available:		
Pescribe Recorder	ı Data (Stream gauge, I	monitoring W	ен, аенаі рпоюѕ	, previous inspe	cuons), II	avallable:		
Remarks: A			7 1 1	00000		/ 1		1 1 / //
and I lot	15 new Cu	utual l	up lud k	orider.	West	er level	n ex	revely hoph
				*				



Site 12. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 12. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 12. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.



Site 12. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 6, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Borough/City:	Date: 9/6/17
Applicant/Owner:	Sampling Point #:
Investigator(s): Mac 5, Jan 5	IDR Alaska, Inc.
Lat. (dec.°) 17 69478 Long. 57.86705 ± NAD 83 Recorded o	n GPS #: Marked on map? Field Map #: ✓
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	rm: Valleyboton Slope (%): 17 Aspect: 5
Local relief: Shape across slope: (linear / convex / concave Shape up/downslope: linear / c	convex / concave NWI classification:
Photo nos./descriptions: 116-117 veg 118-119 hyda Camera #:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	_ If no, explain. HGM type: <u>คื</u>
Are Vegetation $\underline{\mathcal{W}}$, Soil $\underline{\mathcal{M}}$, or Hydrology $\underline{\underline{\mathcal{M}}}$ significantly disturbed? Are "Normal Circu	ımstances" present? Yes 🔀 No
Are Vegetation \wedge , Soil \wedge , or Hydrology \wedge naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Willow Thickel	
Hydrophytic Vegetation Present? Yes No Is the sampled are	2
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	
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)
26	Total Number of Dominant
3 7	Species Across All Strata: 5 (B)
8	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 25 X1= 25
	FACW species 91 X2= 182
3	FAC species
4	FACU speciesX4=
5 11	UPL + NL species X5=
6. <u>8.6.</u> 12. 12. <u> </u>	Column Totals: 123 (A) 228 (B)
Total Sapling/Shrub Cover: 95	
50% of total cover: 47.5 20% of total cover: 19	Prevalence Index = B/A =/_ 8.5
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	in the state of th
1. Cor agn 40 X OBL 12.	Hydrophytic Vegetation Indicators:
3. Par pal. 31 FACW14.	Dominance Test is>50%
4. Pot pal 5 OBL 15.	Prevalence Index is ≤3.0
5. Pyr agan 2 FAC 16.	Morphological Adaptations¹ (Provide supporting
6	data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19 20.	
9.	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
25% 61 total 65%1.	Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground: 10 % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks: Water 70% tentine area mundated.	
	a de la companya del companya de la companya de la companya del companya de la co

SOIL									Sampling Point #:\´
Profile Description	: (Describe to the de	oth needed	to document the i	indicator	or confirm	the abser	nce of indica	tors)	
Depth Horizon	Soil Matrix		Re	dox Fea	tures			a,a dip.	
	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	(pos/	Remarks
(in.) (opt.)	Color (moist)		Color (IIIolac)	<u>70</u>	Type	LUC	_ I EXILITE	<u>neg)</u>	(or use comment number)
						·			
			44.		-		<u> </u>	6 1 <u>3 . </u>	
<u> </u>	y - 1,5		· · · · · · · · · · · · · · · · · · ·		-				
- 1866 				-					
	-				***************************************				
-									
			· · · · · · · · · · · · · · · · · · ·			·			
				***************************************			12.4		,
4									
'Type: C = Concent	ration, $\mathbf{D} = \mathbf{Depletion}$,	RM = Redi	uced Matrix, CS=0	Coated S	Sand Grain	s *Locatio	n: PL = Por	e Lining, RC	= Root Channel, M = Matrix
Hydric Soil Indicate	ors (check ones that	apply, mea	sure from top of	minera	l layers un	less othe	rwise noted	i):	
Standard Indicators	s:		Indicators fo	r Proble	ematic Hyd	dric Soils	3:		
Histosol or Hist	tel (A1) (≥16"organic s	urface,	Alaska	Color Cl	nange⁴ (TA	4)	3C	ne indicator	of hydrophytic vegetation,
sat'd during v	vet period of growing se	ason)	Alaska	COIOI CI	ialige (TA	") 			licator of wetland
	n (A2) (8-16" organics,		Alaska	Alpine S	wales (TA5	5)			an appropriate landscape e present unless disturbed
•	mineral soil with chroma	•		•	•	•	•	problematic.	e present uness disturbed
	de (A4) (within 12"of g " in this pit	rouna	Alaska	Redox w	vith 2.5Y Hu	ıe			color change in Remarks.
			Alaska	Gleved v	without Hue	e 5Y or Re	edder		
Thick Dark Sur	face (A12)	4		rlying La					
Alaska Gleyed	(A13)		Other (e	on see r	o.91 of 2007				
Alaska Redox (•				plain in Rem	arks)			*
Alaska Gleyed									
Restrictive Layer (if p	7.5		Drainage Cla						
•					***************************************		luia Cail Dua	40	Yes X No
Type: Depth (inches)			Soil Map Unit	ivairie.		Пуч	Iric Soil Pre	Sent	ies // No
1. No 500 2. 3.	1 pit dus du	e to	innuction						<u></u>
HYDROLOGY									
Wetland Hydrology	Indicators (check or	es that app	oly, measure fron	n soil su	urface):	Seco	ndary Indica	tors (at least	2 are required)
Primary Indicators	(any one indicator is s	sufficient)	4			ν	Vater-Staine	d Leaves (B9)
X Surface Water (A	\1)	Surfa	ce Soil Cracks (Bo	6)		<u> </u>	Drainage Pat	terns (B10) _	
🔀 High Water Table	e (A2) (w/in 12")	Inund	ation Visible on A	erial Ima	agery (B7)	0	Oxid'd Rhizo:	spheres on Li	ving Roots (C3) (within 12")
Saturation (A3) (w/in 12")	Spars	sely Vegetated Co	ncave S	Surface (B8)			Reduced Iron	
									ange w/in 12")
Water Marks (B1			Deposits (B15)				Salt Deposits		i <u>∰</u> , orak
Sediment Depos			gen Sulfide Odor					ressed Plants	
Drift Deposits (B	3)	Dry-S	eason Water Tab	ie (C2) ((w/in 24")			Position (D2)	Same and the
Algal Mat or Crus	st (B4)	Other	(explain)				Shallow Aqui		w/in 12"\
Iron Deposits (B		***	•				100	n perch H2O Inhic Palief (F	7.45 A. 19
Tour Dehosits (D:	· ·						AC Neutral		04) (caused by water)
*						-√ ≻ 「			> # FACU+UPL dominants)
Field Observations (in	n. from ground surfac	e):							
Surface Water Prese	nt? Yes 🔀	No	Depth of wate	er (in.) _	12				
Water Table Present	? Yes <u>X</u>	No	Depth to wate	er (in.)	0_				
			depth but not yet		,0				
Saturation Present?	Yes _X_	No			7	Moste	and Hudrala	gy Present?	Yes No
		NU				wells	and Hydrold	yy riesent?	162 NO
(includes capillary fring Describe Recorded D		onitoring :	Epi Endo			ne) if ove	ilable:		
pesoling Mecoliner P	rata (su cam yauye, 11	ionitoring v	von, acriai priotos.	, hieviou	ia iliaheeilo	າເວ <i>ງ</i> , π atVa	inabie.		* *
Remarks:	velley bottom -	Flands 1	. 1 16	4 4	h.	throu	1/1		*
Lusie	vova rron	1 WOULD	w/ Tresh	a ru	~~··)	1 vu coo	1/1.		



Site 13. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 6, 2012.



Site 13. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 6, 2012.



Site 13. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 13. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

Project: Anther Mat. Site Borough/City: NW Ac	dic Date: 9/7/12
Applicant/Owner:DOT	
M S T	Sampling Point #:
Lat. (dec.°) 67.15688 Long. 157. D1424 ± NAD 83 Recorded o	IDR Alaska, Inc.
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	Marked on map? K Field Map #:
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave	Slope (%): Aspect:
Photo nos./descriptions: 125-126 Ves 127-128 Soil Camera #:	Onvex / concave NVVI classification: 1997 / CP1/18
Are climatic / hydrologic conditions on the site typical for this time of year? Yes:No:	Veg Type (Viereck Level 4 or other):
Are Vegetation . Soil . or Hydrology . significantly disturbed? Are "Normal Circu	If no, explain. HGM type:
Are Vegetation, Soil, or Hydrology naturally problematic? If needed, explain	answers here
SUMMARY OF FINDINGS	answers nere.
Hydrophytic Vegetation Present? Yes X No	N. A.
Hydric Soil Present?	
Wetland Hydrology Present? Yes No within a wetland?	Yes No Remarks (e.g., marginal?):
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n total >100%. Use 2012 indicator status. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	And the second of the
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2	Total Number of Dominant
3	Species Across All Strata: (B)
Total Tree Cover:	Percent of Dominant Species
Total free Cover.	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. 1. Pho land 15 Ph. 7. Pat Fru 2 TH.	OBL species X1=
2. Dog int. 10 ALLU 8. Pic glass 2 PACE	FACW species 2 X2= 4
3. Sal and 5 PAC 9.	FAC species 59 54 X3= <u>UX177</u>
4. Vaccal: 20 × FAC 10.	FACU species 22 27 X4= 10888
	UPL + NL species X5=
6. Imp 11 5 PMC 12.	Column Totals: <u>84</u> (A) 270 275 (B)
Total Sapling/Shrub Cover:	
50% of total cover: 33 20% of total cover: 13.72	Prevalence Index = B/A = 3,2
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
2. tot pus 2 FAC 13.	Hydrophytic Vegetation Indicators:
3. Car Scin / 10 × FACU 14.	X Dominance Test is>50%
4. Feet alt 3 FIRC 15.	No Prevalence Index is ≤3.0
5. Car rot OBL 16	Morphological Adaptations ¹ (Provide supporting
6. June to	data in Remarks or on a separate sheet)
7	Problematic Hydrophytic Vegetation ¹ (Explain)
8	
9.	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 18	1
-	Hydronhyfia
Zo /o of total cover.	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot X or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks: Mod plants head	3
Cichen 15%	

								å		
SOIL			李		i en en e		. es. f			Sampling Point #:_
	escription:	(Describe to the de	pth neede	d to document the	indicator	r or confirm	the abs	ence of indicate		Sampling Tollin #
Depth	Horizon	Soil Matrix		Re	dox Fea	itures			α,α dip.	
<u>(in.)</u>	(opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	(pos/	<u>Remarks</u>
3-0	Oi.							1 1 1 1	neg)	(or use comment number)
0-2	4	1041412	<u> </u>	March 1994	. ""	. 4.54	. 153	Sal		emin ne enfici
<u>2-5</u>	BL	254412	90		· · ·		<u> - 4 1 </u>	Sal	·	
	-	2.575/1	10	1 10 11 / 1	1	11	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
5-1	137	<u> 5N/ l</u>	<u>80</u>	7.5484/4	$\propto 0$	KMF	RL	5il	Security of the second	
9-110	<u>RZ</u>	Q EUU/7	75		org anis St	·	· <u></u>	50		
<u></u>		10415/1	厉		86-					
¹ Type: C	= Concentra	ation, D = Depletion	RM = Re,	duced Matrix, CS=0	Coated S	Sand Grain	s ² Locat	ion: PL = Pore	Lining, RC =	= Root Channel, M = Matrix
Hydric S	oil Indicator	rs (check ones that	apply, me	easure from top of	minera	l layers un	less oth	nerwise noted)	:	
Standard	d Indicators:	:		Indicators fo	r Probi	ematic Hyd	Iric Soil	s³:		en e
		el (A1) (≥16″organic		Alaska	Color Cl	hange⁴ (TA	4)			of hydrophytic vegetation, icator of wetland
		et period of growing se (A2) (8-16" organics		Alaaka	Almina C	Suelee (TAE		hýc	Irology, and	an appropriate landscape
	underlain by m	nineral soil with chroma e (A4) (within 12"of	a ≤2)		i Bario Ang	Swales (TA5		or p	problematic.	e present unless disturbed
,	surface; @	" in this pit &				vith 2.5Y Hu			ve details of	color change in Remarks.
	ck Dark Surfa				erlying L	without Hue ayer		kedder		
	ska Gleyed (p.91 of 2007 oplain in Rem	arke)			
	ska Redox (A ska Gleyed F	•		Зирріє	einent, ex	chiain in Kein	arks)			
	e Layer (if pr			Drainage Cla	ss.	No.				
Type:	c Layer (ii pi			Soil Map Unit			Н	dric Soil Pres	ent?	Yes X No
Depth	(inches)			:						
Comment	ts:	<u>.</u>	45.				200.23		-	3. · · · · · · · · · · · · · · · · · · ·
1. 2.				4 .		d one.		***		
3.						-				
HYDROL								<u> </u>		
		ndicators (check o		oply, measure fron	n soil sı	urface):		ondary Indicate		
	ndicators (a nce Water (A	any one indicator is		ace Soil Cracks (B	6)			Water-Stained Drainage Patte)
		(A2) (w/in 12")		idation Visible on A	•	agery (B7)				ving Roots (C3) (within 12")
	ation (A3) (w			rsely Vegetated Co) —	Presence of R	educed Iron	(C4)
- Wate	r Marks (B1)	•		Deposits (B15)				Salt Deposits		ange w/in 12")
	nent Deposit		Hyd	rogen Sulfide Odor	·(C1) (w	/in 12")		Stunted or Str	· : :	s (D1)
Drift [Deposits (B3)	Dry-	Season Water Tab	le (C2)	(w/in 24")		Geomorphic P	osition (D2)	
Algal	Mat or Crust	t (B4)	Oth	er (explain)				Shallow Aquita (w/in 24", can		w/in 12")
iron [Deposits (B5))	- Naj				·		•	(caused by water)
		e de la servición de la composición de						FAC Neutral T (# OBL+FACV		# FACU+UPL dominants)
Field Obs	ervations (in	. from ground surfac	ce):		-					
Surface W	Vater Presen	t? Yes	No	Depth of water						
Water Tat	ole Present?		No	- '		15				
0-4 "	D 12			at depth but not yet		-7			.	Yes X No
Saturation		Yes <u>X</u>	No			The same of the sa	Wet	tiand Hydrolog	gy Present?	Yes No
·	capillary fring Recorded Da	ge) ata (stream gauge, i	monitorina	Epi Endo well, aerial photos	Unkno , previou		ns), if av	vailable:		
,		. 3	27 - 4		•	* . * . *		······································		
Remarks:										



Site 16. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 16. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 16. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 16. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

·64 ...

ALTON A HALL ARE THE STORY OF L. C. L.	9/4/17
	ity: Arche MW Date: 9/7/17
Applicant/Owner: NOT	Sampling Point #: 17
	Firm: HDR Alaska, Inc.
	AD 83 Recorded on GPS #: Marked on map? My Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior	Northern Landform:Slope (%): Aspect:
Local relief: Shape across slope: (inear/ convex / concave Shape up/do	4 .
Are climatic / hydrologic conditions on the site typical for this time of year?	Camera #: Veg Type (Viereck Level 4 or other):
Are Vegetation M , Soil M , or Hydrology M significantly disturbed?	Yes: No: If no, explain HGM type:
Are Vegetation N , Soil N , or Hydrology N naturally problematic?	If needed, explain engagers here
SUMMARY OF FINDINGS	Anoss
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No >	s the sampled area within a wetland? Yes No 🔀
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
/EGETATION (Use scientific names.) Estimate absolute % cover (not re	
	Dominance Test worksheet:
<u>Tree Stratum</u> (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.%	Dom? Ind. Number of Dominant Species
1. 12 da 3 x FACU 5.	That are OBL, FACW, or FAC:
2 6	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover: 3	Percent of Dominant Species That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:Multiply by:
Abs.Cov. Dom? Ind. Abs.Cov. 9 1. Potton 20 X FAC 7. Vacculi 8	6 Dom? Ind. OBL species X1=
2. Phylane 5 FAC 8. Pizzla 10	FACW species X2= 2
3. Donint 20 x FACUS. Refinan 25	7 FAC FAC species 85 X3= 255
4. Salvet 8 FAC 10. Salala 3	FAC FACU species 5 0 X4=
5. 5. pn 2 FRC 11	UPL + NL species X5=/0
6. Salar 3 FL 12.	— — Column Totals: 138 (A) 467
Total Sapling/Shrub Cover: 164	
50% of total cover:52 20% of total cover:	20.8 Prevalence Index = B/A = 3.38
Herb Stratum	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Abs.Cov.% Dom? Ind. Abs. Cov.% 1. Cor Sch 15 Y FACU12.	Dom? Ind.
2. Fest alt 3 FAC 13.	Hydrophytic Vegetation Indicators:
3. TA- ALC 2 FAC 14.	Dominance Test is>50%
4. Had ap 2 FACV15	Prevalence Index is ≤3.0
5. Min arc 2 UPC 16.	—— Morphological Adaptations ¹ (Provide support
6. Lynn my FAC 17.	data in Remarks or on a separate sheet)
7. Cay bla. 5 T FAC 18. 8. Per said 1 FAC 19.	Problematic Hydrophytic Vegetation ¹ (Explain
920	
10 21	1 Indicators of hydric soil and wetland hydrology mus
11 22	be present unless disturbed or problematic.
Total Herb Cover: 31	
50% of total cover:	6.2 Hydrophytic
	ground: Vegetation Yes No 7
	ground Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophy (where applicable)	rtes%

SOIL				Sam	pling Point #:	
Profile Description: (Describe to the depth needed to	document the indicator o	r confirm the	absence of indicate	ors)		
Depth Horizon Soil Matrix	Redox Featu	res	•	a,a dip.		
			oc² <u>Texture</u>	(pos/	Remarks	
	<u>70</u>	Type L	<u>rexture</u>	neg) (or use comment number)	
				· · · · ·		
	<u> </u>				in the Sign	
<u> </u>		<u> </u>			en de la companya de	
<u> 2000 </u>					The National Control	
0-2 A 104231			.7	/K	eative of or	
25H BI 104R4/2 95			Gorl _		Commence of A	
10404/4 5	48.24 TS					
14-17 BD EVS/1 80 C	YR314 20	PHF IL	ative sol	areass:		
¹ Type: C = Concentration, D = Depletion, RM = Reduc	· ·	_	ocation: PI = Pore	Lining RC = Rc	oot Channel M = Matrix	
Hydric Soil Indicators (check ones that apply, measu	2000				ot Chamer, W - Wathx	
그의 회사 이 사람들은 사람들이 되었다. 그 사람들은 사람들이 되었다.	n o navighee Ann Abhre	- To 1 (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3 % − 1		
Standard Indicators:	Indicators for Problen	natic Hydric				
Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)	Alaska Color Cha	nge⁴ (TA4)		ne indicator of hy primary indicat	drophytic vegetation,	
Histic Epipedon (A2) (8-16" organics, sat'd,					appropriate landscape	
underlain by mineral soil with chroma ≤2)	Alaska Alpine Sw	ales (TA5)	pos	sition must be pr	esent unless disturbed	
Hydrogen Sulfide (A4) (within 12"of ground	Alaska Redox witl	h 2 5V Hue		problematic.	or change in Remarks.	
surface; @" in this pit			* 10 (a)	ve details of cold	or change in Remarks.	
Thick Dark Surface (A12)	Alaska Gleyed wit	*	or Redder			
Alaska Claved (A42)	Underlying Lay			erio Profesional		
Alaska Gleyed (A13)	Other (e.g., see p.9 Supplement; expla		•		* 1	
Alaska Redox (A14)	Supplement, explo	alli ili Nelliarks,	2 642			
Alaska Gleyed Pores (A15)				<u></u>		
Restrictive Layer (if present)	Drainage Class:)	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.			
Type: ////\/	Soil Map Unit Name:		Hydric Soil Pres	ent? Yes	No	
Depth (inches)	<u> </u>		2.3			
Comments:				Carta.		
1						
3.			3		<i>i</i>	
HYDROLOGY			ý			
Wetland Hydrology Indicators (check ones that apply	, measure from soil surf	face):	Secondary Indicate	ors (at least 2 ar	e required)	
Primary Indicators (any one indicator is sufficient)	•		Water-Stained Wat			
	Soil Cracks (B6)		☐ Drainage Patte		**************************************	
	ion Visible on Aerial Imag	erv (B7)			Roots (C3) (within 12")	
	_	• • • •		educed Iron (C4		
			(pos. α,α or soil color change w/in 12")			
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	posits (B15)		Salt Deposits	Ben a feet starting on a first to		
	en Sulfide Odor (C1) (w/in			essed Plants (D	1)	
Dry-Sea	ason Water Table (C2) (w	/in 24")	Geomorphic P			
Algal Mat or Crust (B4) Other (6	explain)	the second of the second	Shallow Aquita		10"\	
√ Iron Deposits (B5)	and the state of t	* 4 *	19	perch H2O w/in hic Relief (D4) (
iron Deposits (DO)	and the same of the same	and the second s	FAC Neutral T	, , ,	caused by water)	
		S. Sandaning			FACU+UPL dominants)	
Field Observations (in. from ground surface):						
Surface Water Present? Yes No _X	Depth of water (in.)					
Water Table Present? Yes No	Depth to water (in.)	<u> </u>	to the second			
Seeping in at that de	epth but not yet filled?:					
Saturation Present? Yes No	Depth to sat. (in.)	74 I	Wetland Hydrolog	ıv Present?	Yes No X	
(includes capillary fringe)	Epi Endo Unknowr					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
·		- p - 200-01-2/1		* = 1 () () () () () () () () () (Advisor	
Remarks:						
				* .		



Site 17. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 17. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 17. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 17. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

A LI	A /	
Project: Howher M5 Borough	/City: //whatre Date:	
Applicant/Owner:	Sampling Point #: _ 💥	19
Investigator(s): Mac S. Jan J.	Firm: HDR Alaska, Inc.	
Lat. (dec.°) <u>l64./5865</u> Long. <u>157.02718</u> ±'	NAD 83 Recorded on GPS #: Marked on map? ⊻ Field Map #: _	
Subregion (circle one): SE Southcentral Western Aleutian Interio	Northern Landform: Slope (%): Aspect:	and the same
Local relief: Shape across slope: Jinear / convex / concave Shape up/	downslope: linear / convex / concave NWI classification: \$\ \textit{P551/1}\$	5MB
Photo nos./descriptions: 137-138 seil 139-140 veg	Camera #: Veg Type (Viereck Level 4 or other):	
Are climatic / hydrologic conditions on the site typical for this time of yea	? Yes: No: If no, explain. HGM type: 4	leit
Are Vegetation \mathcal{A} , Soil \mathcal{A} , or Hydrology \mathcal{M} significantly disturbed	Are "Normal Circumstances" present? Yes X No	
Are Vegetation A/Soil A, or Hydrology Anaturally problematic?	If needed, explain answers here.	
SUMMARY OF FINDINGS		
Hydrophytic Vegetation Present? Yes No	Is the sampled area	
Hydric Soil Present? Yes X No	within a wetland? Yes 🕌 No 🌊	
Wetland Hydrology Present? Yes X 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")	Dominance Test worksheet:	
	% Dom? Ind. Number of Dominant Species	
1 5		(A)
2 6		
3 7	Species Across All Strata:	(B)
4 8	Percent of Dominant Species	Z
Total Tree Cover:	5 P2 N	4/B)
50% of total cover: 20% of total cove	Prevalence Index worksheet:	
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:	
	.% Dom? Ind. OBL species X1=	
1. Pot tru 5 the 7. Un ist 1= 2. Pre gla 7 FACU 8. Empire 1	FACU OBL species X1= 16	
3. Ph. 140 3 FAC 9. B. France 5	FAC FAC species 39 X3= 117	-
4. Salare 10 × FAC 10.		
5. Salret 2 FAC 11.		T = 0.4 ±
6. Vacculi 10 x FAC 12.	99 201	- (B)
Total Sapling/Shrub Cover: 58		(0)
50% of total cover: 29 20% of total cover		*
Herb Stratum	Trevalence muck - B/A	- '
Abs.Cov.% Dom? Ind. Abs. Cov.	% Dom? Ind.	
2 1. Jun tri 4 FACUA2	Hydrophytic Vegetation Indicators:	
2. Tot pus 2 FAC 13.		
3. (ar seq. 25 X FACU14. 4. led sud 3 FACU15.		
5. Car micro FAC16.		
6. Are sub Facus 7.	 Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) 	ting
7. Gay 20 5 NL 18	4 . 114	
8 19	Problematic Hydrophytic Vegetation ¹ (Explain	n)
9 20		
10 21 11 22.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.	st
	be present unless disturbed of problematic.	
	87	
25% 61 10121 00761	V	
Circular 1/10-ac plot x or other plot dimension: % of ba	e ground: Present?	
% Cover of Wetland Bryophytes% Total Cover of Bryop (where applicable)	ıytes%	
	and brydrology. Negetation is marginal bussed on common in the material gite area in both yplands	
Domprome front Pro Int. 13	Common or the material gite area on both yplands	
an vertage.		- 1

SOIL Brofile Descriptions /	Describe to the de	nth nooded	to document the	indianta		46- 46-4	f :!		Sampling Point #:
Profile Description: (pui needed				the abse	ence of indicato	ors)	
Depth Horizon	Soil Matrix		Re	edox Fea	tures			α,α dip.	
<u>(in.)</u> <u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	<u>Loc²</u>	Texture	<u>(pos/</u> neg)	<u>Remarks</u> (or use comment number)
1-0 Oi				<u> </u>				11097	(or doe comment namber)
0-2 H	1041312								
2-19 13	10/5/1	₹5	10 MISIL	15	QMF	RC	66	· weeks	
	101711	<u> </u>	10-16-116		_ A-1, 11				
		·			<u> </u>	· ——		-	Y STATE OF THE STA
			. 91						E
	· ,		•		ç - 	<u></u>			
				- 	· 			-	
·			\$ *2						**************************************
Type: C = Concentrat	ion, D = Depletion	RM = Red	uced Matrix, CS=	Coated S	Sand Grain	s ² Locatio	on: PL = Pore	Lining, RC =	Root Channel, M = Matr
Hydric Soil Indicators	(check ones that	apply, mea	sure from top of	f minera	l layers un	less oth	erwise noted)		
Standard Indicators:			Indicators fo						
	(A1) (≥16"organic:	ourface :						e indicator o	f hydrophytic vegetation,
	period of growing se		Alaska	Color Cl	hange⁴ (TA	4)			cator of wetland
Histic Epipedon (/	A2) (8-16" organics	sat'd.	A look o	Almina C	tualaa /TA	. · ·	hyd	rology, and	an appropriate landscape
underlain by mir	neral soil with chroma	i ≤2)	Alaska	Alpine S	wales (TA)			present unless disturbed
Hydrogen Sulfide surface; @	(A4) (within 12" of	ground	Alaska	Redox w	vith 2.5Y H	ue		roblematic. ve details of	color change in Remarks.
			Alaska	Gleved	without Hue	5V or P			
Thick Dark Surfac	ce (A12)			erlying La		551 0110	Cadei		
Alaska Gleyed (A	13)		Other (e.a., see p	o.91 of 2007				
X_ Alaska Redox (A1	4)				plain in Rem	narks)			
Alaska Gleyed Po	res (A15)								
Restrictive Layer (if pre		<i>d</i>	Drainage Cla	ass:					1:
Type:	··· ,		Soil Map Uni			Hv	dric Soil Pres	ent?	res No
Depth (inches)			Con Map Cin	t raino.		'''	4110 0011 1 103		C3
Comments:					-				
1.									No. of the Control of
2.						ra ila			
3.									
YDROLOGY	`\	41.4							
Netland Hydrology Inc	dicators (check o	nes that app	oly, measure from	n soil su	ırface):	Seco	ondary Indicate	rs (at least 2	are required)
Primary Indicators (ar	ny one indicator is	sufficient)	į.				Water-Stained	Leaves (B9)	· · · · · · · · · · · · · · · · · · ·
X Surface Water (A1)		Surfa	ce Soil Cracks (B	6)			Drainage Patte	erns (B10)	
★ High Water Table (A) Method M	A2) (w/in 12")		ation Visible on A		agery (B7)				ring Roots (C3) (within 12")
Saturation (A3) (w/i			sely Vegetated Co				Presence of R		
	11 12)			Jiicave 3	ourrace (Do	,	(pos. α,α or s	soil color cha	
Water Marks (B1)		1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A	Deposits (B15)	-			Salt Deposits (C5)	Charles Landing
Sediment Deposits	(B2)	1 10	gen Sulfide Odo				Stunted or Stre	essed Plants	(D1)
Drift Deposits (B3)	* *	Dry-S	eason Water Tab	ole (C2) ((w/in 24")		Geomorphic P	osition (D2)	
Algal Mat or Crust ('B4)	Other	(explain)				Shallow Aquita	ırd (D3)	
			(CAPIGITI)				(w/in 24", can	perch H2O v	v/in 12")
Iron Deposits (B5)		· 사용					Microtopograp	hic Relief (D	4) (caused by water)
							FAC Neutral T		#FAOILURE 1
Field Observations (in. f	rom ground surface	٠٥).					# ORL+FACM	oominants >	# FACU+UPL dominants)
	4.3	•	Depth of wat	or (in \	9				
Surface Water Present?	X	No			<u>a</u>	-			
Vater Table Present?	Yes	No	Depth to wat						
	Seepir	ng in at that	depth but not yet	t filled?:	*	1			
Saturation Present?	Yes _ <u>V</u>	No	Depth to sat.	(in.)	<u> </u>	Wet	land Hydrolog	y Present?	Yes No
includes capillary fringe	-		Epi Endo	Unkno	wn		_		
Describe Recorded Data		nonitoring v	· · · · · · · · · · · · · · · · · · ·			ns), if av	ailable:		and the second second
		4454	20.00		•		at the second	w at the	Example 1.5
Remarks: Material test pit nearly show water table at 4 inches. In our pot 9"									
	,2 %	**. **		*.			- \$		Teg.
								ję.	



Site 19. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 19. Ambler Airport Improvements Wetland Investigation. Facing East. Taken September 7, 2012.



Site 19. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 19. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

A the sale	# 1
Project: Borough/City: Borough	NW Date:9/7/17
Applicant/Owner:	Sampling Point #: 📆 🔍
Investigator(s): Mar 5. Jan 3	HDR Alaska, Inc.
Lat. (dec.°) 67.16013 Long. 157.02699 ± NAD 83 Recorded	on GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Land	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	convex / concave NWI classification:
Photo nos./descriptions: 144-147 Soil vey Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: No:	If no, explain. HGM type:
Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Cir	cumstances" present? Yes 🔀 No
Are Vegetation N , Soil N , or Hydrology N naturally problematic? If needed, explain	n answers here.
SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes X No	S S S S S S S S S S S S S S S S S S S
lis the sampled a	rea la situação de la latina de la composição de la compo
- William a Wellan	. The state of the
Wetland Hydrology Present? Yes No X	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % c	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Prz gla 3 X FACU 5.	That are OBL, FACW, or FAC: (A)
2 6 3 7	Total Number of Dominant Species Across All Strata:
4 8.	(B)
Total Tree Cover: 3	Percent of Dominant Species That are OBL FACW or FAC
15	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. Sol glay 5 FAC 7. Phologo I FAC	OBL species X1=
2. Piz glay 5 PACV 8.	FACW species 2 X2= 4
3. Var. 61 15 FAC 9	FAC species 1/0 x3= 33.0
4. Dry ent 15 FACU10. 5. Betran 25 × FAC 11.	FACU species 34 X4= 136
5. Betran 25 X FAC 11. 6. Pot Fry 50 X FAC 12.	UPL + NL species X5= X5=
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Column Totals:
Total Sapling/Shrub Cover: 116 50% of total cover: 58 20% of total cover: 23:2	2 7 7
20% of total cover.	Prevalence Index = B/A = 3.23
Herb Stratum Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
Abs. Cov.% Dom? Ind. 1. Sar and 2 12.	A de la companya de l
2. (ar soi) 10 X FACU13.	Hydrophytic Vegetation Indicators:
3. Car mic 10 x FAC 14.	Dominance Test is>50%
4. Har sca 2 FAC 15.	<u>N</u> e Prevalence Index is ≤3.0
5. Arc mb PACW16.	Morphological Adaptations ¹ (Provide supporting
6. Ped 5ud FACW17. 7. Min arc VPL 18.	data in Remarks or on a separate sheet)
7. Min arc 1 UPC 18. 8. Gal bor 1 PCU 19.	Problematic Hydrophytic Vegetation ¹ (Explain)
9	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 28	
50% of total cover:	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Remarks: Add a date to the second and the se	
Remarks: Hearther Mount	
Bet nun is a 4' tall	

SOIL	. 11					S	Sampling Point #: 22
Profile Description: (Describe to the depth needed to	document the in	dicator	or confirm	the abse	ence of indicato		our pang router
Depth Horizon Soil Matrix							
· · · · · · · · · · · · · · · · · · ·				Loc ²	Texture	(pos/	Remarks
(in.) (opt.) Color (moist) % C	Color (moist)	<u>%</u>	Type ¹	LUC	1 exture	neg)	(or use comment number)
20 00	:					<u> </u>	
		10	0105				
2-6 B 258411 90 51	R416	10	RMF	PC	Sal	<u>neg</u>	. "
6-26 C 1046-12				<u> </u>	Sano	neg	<u>. 4</u>

¹ Type: C = Concentration, D = Depletion, RM = Reduc	ed Matrix, CS=Co	oated S	and Grains	s ² Locatio	on: PL = Pore	Lining, RC =	Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, measu	re from top of n	nineral	layers unl	ess oth	erwise noted)	:	
Standard Indicators:	Indicators for		-		_		
Histosol or Histel (A1) (≥16″organic surface,						e indicator o	f hydrophytic vegetation,
sat'd during wet period of growing season)	Alaska C	olor Ch	ange⁴ (TA4	4)	one	primary indi	cator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd,	Alaska A	lpine Sv	vales (TA5	5)			an appropriate landscape present unless disturbed
underlain by mineral soil with chroma ≤2)	<u></u>			,		roblematic.	s present uniess disturbed
Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	Alaska R	edox wi	ith 2.5Y Hu	ie	⁴Gi	ve details of	color change in Remarks.
	Alaska G	leyed w	ithout Hue	5Y or R	ledder		
Thick Dark Surface (A12)	Underl	ying La	yer				
Alaska Gleyed (A13)	Other (e.g	j., see p.	91 of 2007				
Alaska Redox (A14)			olain in Rema	arks)			
Alaska Gleyed Pores (A15)							
Restrictive Layer (if present)	Drainage Class	s: 1 _N	(D)				
Type: None	Soil Map Unit N	Name:		Ну	dric Soil Pres	ent? Y	res No
Depth (inches)			Magazia.				
Comments:))				. W	Ta. 1.24		e
1. Well dramed sand					4.5		
2. 1 **** **** **** ****							
2.5							
HYDROLOGY	mossure from	:		C-0		(at la aat 0	
Wetland Hydrology Indicators (check ones that apply	, measure from	son su	пасе):		ondary Indicato Water-Stained		
Primary Indicators (any one indicator is sufficient) // Surface Water (A1) // Surface	Sail Cracks (PS)			¥	Drainage Patte		
	Soil Cracks (B6) ion Visible on Ae		con (P7)		ŭ	# 1 € 1 Table	ring Doots (C2) (with a con-
					Presence of R		ring Roots (C3) (within 12")
Saturation (A3) (w/in 12") — Sparsel	y Vegetated Con	cave Si	urface (B8)	· - -	(pos. a,a or		
Water Marks (B1) Marl De	posits (B15)				Salt Deposits ((C5)	est to the second
Sediment Deposits (B2) Hydroge	Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Stunted or Stressed Plants (D1)						
Drift Deposits (B3) Dry-Sea	ison Water Table	(C2) (v	v/in 24")		Geomorphic P	osition (D2)	and the state of the state of
Algal Mat or Crust (B4) Other (e	explain)			-	Shallow Aquita		- 40"\
					(w/in 24", can		1 NO CONT. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Iron Deposits (B5)					FAC Neutral T		4) (caused by water)
green and the second se							# FACU+UPL dominants)
Field Observations (in. from ground surface):							
Surface Water Present? Yes No	Depth of water	(in.)		Ì			
Water Table Present? Yes No	Depth to water	(in.)		Ì			
Seeping in at that de	epth but not yet fi	illed?:					
Saturation Present? Yes No _>	Depth to sat. (i			Wet	land Hydrolog	v Present?	Yes No 🔀
(includes capillary fringe)		Unknow			, 3.0.08	,,	
Describe Recorded Data (stream gauge, monitoring well				ns), if av	/ailable:		
`				.,, : =:-			
Remarks:				_		-	



Site 22. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 22. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 22. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.



Site 22. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.

Project: Ambler MS Borough/City: N	Warric Date: 9/7/12
Applicant/Owner:	Sampling Point #: 24
M/	IDD Alaska I
Lat. (dec.°) 67.16026 Long. 157.03345 ± NAD 83 Recorded o	n GPS #: Marked on man? # Field Mon #
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	rm: Slope (%): Aspect:
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / c	onvex / concave NWI classification:
Photo nos./descriptions: 150 153 50. US Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	_ If no, explain. HGM type:
Are Vegetation $\frac{N}{\Lambda}$, Soil $\frac{N}{\Lambda}$, or Hydrology $\frac{N}{\Lambda}$ significantly disturbed? Are "Normal Circu	imstances" present? Yes No
Are Vegetation N , Soil N , or Hydrology N naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Tall show borch	
Hydrophytic Vegetation Present? Yes No Is the sampled are	a
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). % car	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind.	Number of Dominant Species
1. Pir sta 2 X FALV 5.	That are OBL, FACW, or FAC: (A)
2. 6. 3. 7.	Total Number of Dominant Species Across All Strata: 5
4	(B)
Total Tree Cover: 2	Percent of Dominant Species
50% of total cover: 20% of total cover: 0. 4	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Het glan 85 X TAC 7. Hr. sub 5 TACW	OBL species X1=
3. Vacce unti 25 X FAC 9. Pro a la 5 FACU	FACW species $\frac{1}{160}$ $\frac{1}{160}$ $\frac{1}{160}$ $\frac{1}{160}$ $\frac{1}{160}$ $\frac{1}{160}$
3. Vaca . 11 25 X FAC 9. Pro gla 5 FACU 4. Pottfru 20 FAC 10.	
5. Salvet 5 FAC 11.	
6. Salala 5 FAC 12.	773
Total Sapling/Shrub Cover: 167	Column Totals: (A) /27 (B)
50% of total cover: 83.5 20% of total cover: 33.4	Prevalence Index = B/A = 3.23
Herb Stratum	1 revalence index = B/A =
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. tas. alt 15 + FAC 12.	Hydrophytic Vegetation Indicators:
2. Cor sa 95 × FACV13. 3. Min are 3 DPL 14.	Dominance Test is>50%
4. Galbor 2 FACUS.	No Prevalence Index is ≤3.0
5. Hedaly 3 FACU16.	Morphological Adaptations ¹ (Provide supporting
6. San any 5 - FAC 17.	data in Remarks or on a separate sheet)
7. B3 plu #ACU18	Problematic Hydrophytic Vegetation ¹ (Explain)
8	——————————————————————————————————————
9	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 54	71 - 19
50% of total cover: 27 20% of total cover: 10.8	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable) Remarks:	- N
Remarks: Feather Moss	

SOIL	Sampling Point #: _&
Profile Description: (Describe to the depth needed to document the indicator or confirm to	the absence of indicators)
Depth Horizon Soil Matrix Redox Features	<u>α</u> ,α dip.
(in.) (opt.) Color (moist) % Color (moist) % Type ¹	Loc ² Texture (pos/ Remarks
1-0 A	neg) (or use comment number)
0-2 A 1048312	
	2400
2-10 B 104R5/1 90 5YR314 10 RMF	KS SAL Neg
10-20 C Variegated	Sand Beg
Street Age 1	
¹ Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains	² Location: PL = Pore Lining, RC = Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unle	
Standard Indicators: Indicators for Problematic Hydroxidation	[18] : 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
1 1 Harand and Haral (AA) (Control of the Control o	³ One indicator of hydrophytic vegetation
1	one primary indicator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd, Alaska Alpine Swales (TA5)	hydrology, and an appropriate landscape
underlain by mineral soil with chroma ≤2)	position must be present unless disturbed or problematic.
Hydrogen Sulfide (A4) (within 12"of ground surface; @ " in this pit Alaska Redox with 2.5Y Hu	
Thick Dady Surface (A12) Alaska Gleyed without Hue	그는 그는 그렇게 하는 그는 그들은 그를 하셨다.
Thick Dark Surface (A12) Underlying Layer	51 of Reddel
Alpale Claved (A42)	
Alaska Redox (A14) Other (e.g., see p.91 of 2007 Supplement; explain in Rema	arks)
Alaska Gleyed Pores (A15)	,
	Hudvia Cail Descent2
	Hydric Soil Present? Yes No
Depth (inches)	
1. will drained forming soil	
2.	
3.	
HYDROLOGY	
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):	Secondary Indicators (at least 2 are required)
Primary Indicators (any one indicator is sufficient)	A/Water-Stained Leaves (B9)
Surface Water (A1) Surface Soil Cracks (B6)	Drainage Patterns (B10)
High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (within 12")
Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8)	Dropping of Dadwood Iron (CA)
200	(pos. α,α or soil color change w/in 12")
Water Marks (B1) Marl Deposits (B15)	Salt Deposits (C5)
Sediment Deposits (B2) Hydrogen 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)
Algal Mat or Crust (B4)	Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
✓ Iron Deposits (B5)	MIcrotopographic Relief (D4) (caused by water)
23 non acposite (ac)	FAC Neutral Test (D5)
	(# OBL+FACW dominants > # FACU+UPL dominants)
Field Observations (in. from ground surface):	
Surface Water Present? Yes No Depth of water (in.)	1981
Water Table Present? Yes No Depth to water (in.)	et e
Seeping in at that depth but not yet filled?:	
Saturation Present? Yes No Depth to sat. (in.)	Wetland Hydrology Present? Yes No
(includes capillary fringe) Epi Endo Unknown	a was a section
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection	ıs), if available:
Remarks:	Land Control
	· · · · · · · · · · · · · · · · · · ·



Site 24. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 24. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 24. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 24. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

Project: Ambler Material Site Borough/City: Hrete	<i>NN</i> Date: 9/7/12
Applicant/Owner:DOT	Sampling Point #: 29
Investigator(s): Mue 5, Jan J. Firm:	HDR Alaska, Inc.
Lat. (dec.°) 67.16169 Long. 157.03859 ± NAD 83 Recorded c	on GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Slope (%): - Aspect:
Local relief: Shape across slope: linear/ convex / concave Shape up/downslope: linear / convex / concave	convex / concave NWI classification: Up land
Photo nos./descriptions: 160-161 - Soil 162-163 vec Camera #:	_ Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\underline{\mathcal{N}}}$, or Hydrology $\underline{\underline{\mathcal{N}}}$ significantly disturbed? Are "Normal Circu	umstances" present? Yes No
Are Vegetation N , Soil N , or Hydrology N naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Openwiller / granition mending	
Hydrophytic Vegetation Present? Yes X No Is the sampled are	22
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). % car	n 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:
2 6	Total Number of Dominant 5
3 7	Species Across All Strata: (B)
Total Tree Cover:	Percent of Dominant Species That are ORL FACW or FACC
	That are OBL, FACVV, OF FAC. (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. 1. Down 20 X FACV 7. Vale of G FAC	OBL species X1=
2. Sal ala 7 FAC 8. Sal arc I PMC	FACW species X2= 8
3. Patfeu 20 X FAC 9.	FAC species
4. Kho lap 10 FAC 10	FACU species X4=
5. Bet nan 15 X FAC 11.	UPL + NL species
6. Ha ruh 2 PHCh12.	Column Totals:
Total Sapling/Shrub Cover: 81	329
50% of total cover: 40.5 20% of total cover: 16.2	Prevalence Index = B/A =
Herb Stratum	*
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind. 1. Con paic 30 × FAC 12.	
2. Hed alp 7 VPL 13.	Hydrophytic Vegetation Indicators:
3. Feet alt 30 x FAC 14.	Dominance Test is>50%
4. Car soic 15 HCU 15	Prevalence Index is ≤3.0
5. Joine Ott 16.	Morphological Adaptations ¹ (Provide supporting
6. Minarc d	data in Remarks or on a separate sheet)
7. <u>San any</u> 1 <u>FACW18.</u> 8.	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:	· .
50% of total cover: 43 20% of total cover: 17. 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%	Present?
(where applicable)	
Remarks: Bet nun is <1'	

SOIL		Sampling Point #: 📿	29		
Profile Description: (Describe to the depth needed to	document the indicator or confirm the				
Depth Horizon Soil Matrix	Redox Features	a,a dip.			
(in.) (opt.) Color (moist) % C	color (moist) % Type ¹	Loc² Texture (pos/ Remarks			
1-0 01		neg) (or use comment nun	<u>nber)</u>		
0-3 A 104R312		1600			
3-7 B 1046411 30		Serl neg			
104R512 TO		Sel neg			
7-19 Varientes)		Sand nee			
Villegues	· · · · · · · · · · · · · · · · · · ·	sand neg			
		<u> </u>			
1					
¹ Type: C = Concentration, D = Depletion, RM = Reduce			Matrix		
Hydric Soil Indicators (check ones that apply, measu	re from top of mineral layers unles	ss otherwise noted):			
Standard Indicators:	Indicators for Problematic Hydric				
Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)	Alaska Color Change ⁴ (TA4)	³ One indicator of hydrophytic vegetat one primary indicator of wetland	*1 v T		
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Alaska Alpine Swales (TA5)	hydrology, and an appropriate landso position must be present unless distu			
Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	Alaska Redox with 2.5Y Hue	or problematic. ⁴Give details of color change in Rema	arks.		
Thick Dark Surface (A12)	Alaska Gleyed without Hue 5 Underlying Layer	Y or Redder			
Alaska Gleyed (A13)	Other (e.g., see p.91 of 2007				
Alaska Redox (A14)	Supplement, explain in Remark	(s)			
Alaska Gleyed Pores (A15)					
Restrictive Layer (if present)	Drainage Class:				
Type:	Soil Map Unit Name:	Hydric Soil Present? Yes No	5		
Depth (inches)	·				
Comments:					
1.					
2. 3.					
HYDROLOGY Wetland Hydrology Indicators (check ones that apply,	measure from soil surface):	Secondary Indicators (at least 2 are required)			
Primary Indicators (any one indicator is sufficient)	illeasure nom son surface).	N Water-Stained Leaves (B9)			
	Soil Cracks (B6)	Drainage Patterns (B10)			
1 1	on Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (within	n 12"\		
	5 , ,	Presence of Reduced Iron (C4)	11,12)		
	y Vegetated Concave Surface (B8)	(pos. α,α or soil color change w/in 12")			
	posits (B15)	Salt Deposits (C5)	. ,		
1	en Sulfide Odor (C1) (w/in 12")	Stunted or Stressed Plants (D1)			
Drift Deposits (B3)	son Water Table (C2) (w/in 24")	Geomorphic Position (D2)			
Algal Mat or Crust (B4) Other (e	xplain)	Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")			
√ Iron Deposits (B5)		MIcrotopographic Relief (D4) (caused by water)			
	•	FAC Neutral Test (D5)			
Field Observations (in. from ground surface):		(# OBL+FACW dominants > # FACU+UPL dominar	n(S)		
Surface Water Present? Yes No	Depth of water (in.)				
Water Table Present? Yes No	Depth to water (in.)				
	epth but not yet filled?:				
		Wetland Hydrology Present? Yes No	+		
Saturation Present? Yes No		Wetland Hydrology Present? Yes No			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well	Epi Endo Unknown) if available:			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					
i e e e e e e e e e e e e e e e e e e e					



Site 29. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 29. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 29. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 29. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

Project: Ambler Mat. Site	Borough/City:	NWA	cho	Date:	9/7/12
Applicant/Owner: DOT					Point #:3 3
Investigator(s): Mac 5. Jay J.		_ Firm: H	DR Alaska, Inc.		N 40 to
Lat. (dec.°) 67.16090 Long. 157.049	<u>153</u> ±′ NAD 83 Re	corded or	n GPS #: 👤 Mari	ked on map? 🔀	<i>₩/Ы0</i> _ Field Map #:
Subregion (circle one): SE Southcentral Western	Aleutian Interior Northern	Landfor	m: <u>flut</u>	Slope (%):	Aspect:
Local relief: Shape across slope: linear/convex/conca	ave Shape up/downslope:	linear/ co	onvex / concave	WI classification	on: PSSI/EM
Photo nos./descriptions: 170-171 501 172	<u>- 173 veg</u> Camer	a #:	Veg Type (Viereck	Level 4 or othe	er):
Are climatic / hydrologic conditions on the site typical for	r this time of year? Yes: 💢	No:	If no, explain.		HGM type:
Are Vegetation , Soil , or Hydrology , signif	ficantly disturbed? Are "Nor	mal Circui	mstances" present?		_
Are Vegetation \(\frac{\sqrt{1}}{\sqrt{1}}, \text{Soil } \(\frac{\sqrt{1}}{\sqrt{1}}, \text{ or Hydrology } \(\frac{\sqrt{1}}{\sqrt{1}} natural natu	ally problematic? If needed	, explain a	answers here.	_	
SUMMARY OF FINDINGS	Low will	,		h	
Hydrophytic Vegetation Present? Yes	No	100			
Hydric Soil Present? Yes	No Is the sam	wetland?		O	
Wetland Hydrology Present? Yes 🔀	No		Remarks (e.g., r		n na mara in na 1966. Taona ao Frantsa
VEGETATION (Use scientific names.) Estimate absolu	ute % cover (not relative cover	≘r). % can			etatue
大学 大学 大学 大学 大学 大学 大学 大学		<i>x,y, x,</i> ==	Dominance Test	worksheet:	status.
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species	Cov.% Dom?	Ind.	Number of Domina	ent Spacias	y
		iiid.	That are OBL, FAC		(A)
			Total Number of D	ominant	
			Species Across All		<u>4</u> (B)
4 8		***************************************			· · · · · · · · · · · · · · · · · · ·
Total Tree Cover:			Percent of Domina That are OBL, FAC		100 / (A/B)
50% of total cover:2	20% of total cover:	ľ	Prevalence Index		, (ND)
Sapling/Shrub Stratum (woody plants < 3" dbh)	070 01 total 0010		Total % Co	over of:	Multiply by:
Abs.Cov.% Dom? Ind.	Abs.Cov.% Dom?	Ind.		36	X1= 36
1. Bet nan 20 x FAC 7. Vacc	<u>ul</u> 2	FAC	OBL species		
			FACW species	777	X2= /6
			FAC species	48	X3= 144
1 - 11 (1-16) - 14			FACU species	13	X4= <u>52</u>
6. Pre clum 2 FACU12.	<u> </u>		UPL + NL species		X5=
	49		Column Totals:	<u>/ 0Z(</u> A)	<u>242</u> (B)
Total Sapling/Shrub Cover:	9 8				0 17
50% of total cover: 24.5	0% of total cover: 9.8		Prevalence Ind	lex = B/A =	6.51
Helb Chattani					
Abs.Cov.% Dom? Ind. 1. <u>Cov Sci</u> 10 FAW 12.	Abs. Cov.% Dom?	Ind.			·
2. Car gan 1 OBL 13.			Hydrophytic Vege	tation Indicate	ors:
3. to F ous 2 FAC 14.			Dominance	Test is>50%	
4. Fri ang 20 X OBL 15.				Index is ≤3.0	
5. En russ d Frau16			Morphologic	ral Adantations ¹	Provide supporting
6. 1613 plu 1 17.				emarks or on a s	
7. Fest alt FAC 18.			Problematic	: Hvdronhvtic Ve	egetation ¹ (Explain)
8. <u>Frisch</u> 15 X 0BC 19. 9. Egwar T FACW20.				11,41,41,11,11,11	getation (Explain)
			e An an aras securin		
11 22.			¹ Indicators of hydri be present unless of	c soil and wetia disturbed or pro	ind hydrology must
	53				Dioatio.
	· · · · · · · · · · · · · · · · · · ·		_		
20 /0 of total cover.			Hydrophytic Vegetation	Yes	Mo.
Circular 1/10-ac plot v or other plot dimension:	% of bare ground:	1	Present?	169	- NO
% Cover of Wetland Bryophytes% Tota (where applicable)	Il Cover of Bryophytes	<u></u> %			
Remarks:		L			· · · · · · · · · · · · · · · · · · ·

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)								
Depth Horizon Soil Matrix Redox Features α,α dip.								
	oc² Texture (pos/ Remarks							
- U-O - A:	neg) (or use comment number)							
0-1 A 104R313	No spilite in the spi							
<u> </u>								
1-16 B N4/1 90 109R4/4 10 RMF R	le Fear pos lots of orangemen							
12 10 10 10 19 E	Alivoration t							
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Location: PL = Pore Lining, RC = Root Channel, M = Matrix								
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):								
Standard Indicators: (check ones that apply, measure from top or mineral layers unless otherwise noted): Standard Indicators: Indicators for Problematic Hydric Soils ³ :								
History of History (Ad)	³ One indicator of hydrophytic vegetation,							
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							
underlain by mineral son with chroma 32)	position must be present unless disturbed or problematic.							
Hydrogen Sulfide (A4) (within 12" of ground surface; @ in this pit Alaska Redox with 2.5Y Hue	⁴ Give details of color change in Remarks.							
Thick Dark Surface (A12) —— Alaska Gleyed without Hue 5Y Underlying Layer	or Redder							
Alaska Gleyed (A13) Other (e.g., see p.91 of 2007								
X Alaska Redox (A14) Supplement; explain in Remarks	5)							
Alaska Gleyed Pores (A15)								
Restrictive Layer (if present) Drainage Class:								
Type: Soil Map Unit Name:	Hydric Soil Present? Yes 🗶 No							
Depth (inches)								
Comments:	: 4							
1. 2.								
3.								
HYDROLOGY								
Wetland Hydrology Indicators (check ones that apply, measure from soil surface):	Secondary Indicators (at least 2 are required)							
Primary Indicators (any one indicator is sufficient)	Water-Stained Leaves (B9)							
Surface Water (A1) Surface Soil Cracks (B6)	Drainage Patterns (B10)							
∠ High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (within 12")							
Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4)							
Water Marks (B1) Marl Deposits (B15)	(pos. α,α or soil color change w/in 12")Salt Deposits (C5)							
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12")								
	Stunted or Stressed Plants (D1)							
Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24")	Stunted or Stressed Plants (D1) Geomorphic Position (D2)							
Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24")	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)							
Algal Mat or Crust (B4) Other (explain)	Geomorphic Position (D2)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5)	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") Microtopographic Relief (D4) (caused by water)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5)	Geomorphic Position (D2) Shallow Aquitard (D3) (Win 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5)	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") Microtopographic Relief (D4) (caused by water)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5)	Geomorphic Position (D2) Shallow Aquitard (D3) (Win 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5) Field Observations (in. from ground surface):	Geomorphic Position (D2) Shallow Aquitard (D3) (Win 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes X No Depth of water (in.) Value Table Present? Yes X No Depth to water (in.) Value Table Present?	Geomorphic Position (D2) Shallow Aquitard (D3) (Win 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes X No Depth of water (in.) 7 Water Table Present? Yes X No Depth to water (in.) 0 Seeping in at that depth but not yet filled?: X	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)							
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes X No Depth of water (in.) Value Table Present? Yes X No Depth to water (in.) Seeping in at that depth but not yet filled?: X	Geomorphic Position (D2) Shallow Aquitard (D3) (Win 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5)							
Algal Mat or Crust (B4)Other (explain)Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes × No Depth of water (in.) Water Table Present? Yes × No Depth to water (in.) Seeping in at that depth but not yet filled?: × Saturation Present? Yes × No Depth to sat. (in.)	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Wetland Hydrology Present? Yes No							
Algal Mat or Crust (B4)Other (explain)Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes X No Depth of water (in.) Water Table Present? Yes X No Depth to water (in.) Seeping in at that depth but not yet filled?: X Saturation Present? Yes X No Depth to sat. (in.) (includes capillary fringe)	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Wetland Hydrology Present? Yes No							
Algal Mat or Crust (B4)Other (explain)Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes X No Depth of water (in.) Water Table Present? Yes X No Depth to water (in.) Seeping in at that depth but not yet filled?: Saturation Present? Yes X No Depth to sat. (in.) (includes capillary fringe)	Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Wetland Hydrology Present? Yes No							



Site 33. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 33. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 33. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 7, 2012.



Site 33. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 7, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region _____Borough/City: UW ANDE Applicant/Owner: Investigator(s): Firm: HDR Alaska, Inc. Lat. (dec.°) 67-15164 Long. 157.03047 ±___' NAD 83 Recorded on GPS #; <__ Marked on map? × Field Map #; Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Valley by Horn Slope (%): Shape across slope: (linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Photo nos./descriptions: 501 195,196 Veg 197,198 __Camera #: ____ Veg Type (Viereck Level 4 or other): _ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: _____ No: ____ Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{M}}$, or Hydrology $\underline{\mathcal{N}}$ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____ Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here, Closed willow tall shouls SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area No. Hydric Soil Present? No within a wetland? Wetland Hydrology Present? Νo Remarks (e.g., marginal?): VEGETATION (Use scientific names.) **Dominance Test worksheet:** Tree Stratum (dbh≥ 3") Abs.Cov.% Dom? Sp. Species Abs.Cov.% Dom? Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: 50% of total cover: _ 20% of total cover: Prevalence Index worksheet: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Cov.% Dom Ind. Ind. OBL species 30 30 FAC 7. 97 **FACW** species FAC species FAC FACU species 3 15 UPL + NL species Column Totals: 179 143 Total Sapling/Shrub Cover: Prevalence Index = B/A = 2.76 50% of total cover: 71,5 20% of total cover: Herb Stratum Cov.% Cov.% Dom Ind. FACK12. Hydrophytic Vegetation Indicators: FAC 13. ✓ Dominance Test is>50% Prevalence Index is ≤3.0 OBL 15. FAC16. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 22. Total Herb Cover: 50% of total cover: _ / 8 ____ 20% of total cover: _ Hydrophytic Vegetation Circular 1/10-ac plot ____ or other plot dimension: ____ __ % of bare ground: __

Remarks:

(where applicable)

% Cover of Wetland Bryophytes _______% Total Cover of Bryophytes

Present?

Brefile Department (Department to the	o dooth pooded t		: f f			- K-37. *	721 .	Sampling Point #: 42
Profile Description: (Describe to th		-			the abse	nce of indicato	rs)	
Depth Horizon Soil Ma	atrix	Re	dox Fea	tures			α,α dip.	
(in.) Name Color (moist	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	(pos/ neg)	Remarks (or use comment number)
800 0								
							-	
0-12 B 5V3/1		· ·				501	neg	
							<u></u>	
				·				
						W		
¹ Type: C = Concentration, D = Deple	tion, RM = Reduc	ced Matrix, CS=0	Coated S	and Grains	Locatio	n: PL = Pore	Linina. RC	= Root Channel M = Matrix
Hydric Soil Indicators (check ones								redet offamiles, wi – watty
		Indicators fo				•		
Histosol or Histel (A1) (≥16",sat'	d during wet			-			e indicator	of hydrophytic vegetation,
period of growing season) Histic Epipedon (A2)(8-16", sat	'd underlain by			ange⁴ (TA₄		one	primary ind	licator of wetland an appropriate landscape
mineral soil with chroma		Alaska A	Alpine S	wales (TA5)	posi	tion must b	e present unless disturbed
Hydrogen Sulfide (A4) (w/in 12"o surface; @" in this pit	of ground	Alaska F	Redox w	ith 2.5Υ Hι	ie		roblematic. e details of	color change in Remarks.
Thick Dark Surface (A12)		Alaska (Underlyi		vithout Hue	5Y or Re			3 marianter
Alaska Gleyed (A13)				p.91 of 20()7		\$	
Alaska Redox (A14)				plain in Rer				
Alaska Gleyed Pores (A15)								
Restrictive Layer (if present)		Drainage Clas	ss: /	20		····		
Type: None		Soil Map Unit	Name:		Hyd	ric Soil Prese	nt?	Yes <u>X</u> No
Depth (inches)				wzdądynich in				
Comments: 1.							· · · · · · · · · · · · · · · · · · ·	
2.								
3. 10 Media								
HYDROLOGY								
Wetland Hydrology Indicators (chec	k ones that apply	, msr from soil	surface):	Secor	ndary Indicator	s (at least	2 are required)
Primary Indicators (any one indicator is	s sufficient)				٧	Vater-Stained	Leaves (B9)
Surface Water (A1)	Surface	Soil Cracks (B6	5)		. <u>X</u> D	rainage Patte	ns (B10) <u>4</u>	year to rivercland
High Water Table (A2) (w/in 12")	Inundat	ion Visible on Ae	erial Ima	gery (B7)	C	xid'd Rhizospl	heres on Li	ving Roots (C3) (w/in 12")
Saturation (A3) (w/in 12")	Sparsei	ly Vegetated Cor	าcave Sเ	ırface (B8)		resence of Re (pos. α,α or s		
Water Marks (B1)	Mari De	posits (B15)				alt Deposits (0		ange w/m 12)
Sediment Deposits (B2)	Hydroge	en Sulfide Odor ((C1) (w/i	n 12")	s	tunted or Stre	ssed Plants	(D1)
Drift Deposits (B3)	Dry-Sea	ason Water Table	e (C2) (v	v/in 24")	_ <u>X</u> G	eomorphic Po	sition (D2)	erina da serina da s Serina da serina da s
Algal Mat or Crust (B4)	Other (e	explain)			S	hallow Aquitar	d (D3)	
Iron Deposits (B5)		·				w/in 24", can p		w/in 12″) 4) (caused by water)
						AC Neutral Te		4) (caused by water)
	· .				(# OE	BL+FACW don	ninants > #	FACU+UPL dominants)
Field Observations (in. from ground sur	-			1				
Surface Water Present? Yes	-	Depth of water	—	-				
Water Table Present? Yes	No	Depth to water		6				
	eping in at that de							,
Saturation Present? Yes	_ No	Depth to sat. (i			Wetla	nd Hydrology	Present?	Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge	monitoring well		Unknow		a) if =::='	labla.		`
	, monitoring wei	i, aciiai pilotos,	hi evious	inspection	s), ii avai	iable:		
Remarks:								



Site 42. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 42. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 42. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 42. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

Project: Anhles Md Site Borough/City: MW Ar	dic Date:9/3/17
Applicant/Owner:	Sampling Point #: 43
Investigator(s): Mac S. Jay J. Firm:	HDR Alaska Inc
Lat. (dec.°) 67,15199 Long. 157,029472 ± NAD 83 Recorded	on GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Lands	form: f(at Slope (%): Aspect:
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	convex / concave NWI classification: \$551/E/U.V.
Photo nos./descriptions: 199-202, 501, VegCamera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes:No:	If no, explain. Will HGM type:
Are Vegetation $\underline{\mathscr{V}}$, Soil $\underline{\mathscr{V}}$, or Hydrology $\underline{\mathscr{V}}$ significantly disturbed? Are "Normal Circ	cumstances" present? Yes KNo
Are Vegetation M, Soil M, or Hydrology M naturally problematic? If needed, explain	n answers here.
SUMMARY OF FINDINGS Voicculi, Car sci meadon	
Hydrophytic Vegetation Present? Yes X No X Is the sampled ar	
Hydric Soil Present? Yes X No within a wetland	ea !? Yes X No <u>\$</u>
Wetland Hydrology Present? Yes X No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	an 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: 3 (B)
4 8	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. 1. Vaccadi 70 X FAC 7. Are 145 \ PAGE	OBL species X1=
	FACW species 12 X2= 24
3. Salget 20 FACU 9.	FAC species 110 X3= 33°
4. Pot fry 5 FAC 10.	FACU species <u>44</u> x4= 176
5. <u>Sal pal</u> <u>5</u> <u>FAC</u> 11	UPL + NL species
6. Viz gla 3 - ACU 12.	Column Totals: 167 (A) 535 (B)
Total Sapling/Shrub Cover: JH 134	(6)
50% of total cover: 57 67 20% of total cover: 26.8	Prevalence Index = B/A = 3,20
Herb Stratum	Trotalcine mack Birt =
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Fan var 5 FACW12.	Hydrophytic Vegetation Indicators:
2. The state 20 × FACU13. 3. Bis pln	PSAJo Dominance Test is>50%
4. Car sci 20 × FACU 15.	No Prevalence Index is ≤3.0
5. Cormen 10 X FACW16.	1 22
6. (2016 3/2 17.	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7. Ped Sul PACHAS.	
8	Problematic Hydrophytic Vegetation ¹ (Explain)
9	
10 21 21 22.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
	be present unless disturbed of problematic.
Total Herb Cover: 58 38	
20% of total cover.	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot ✓ or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks: Mass VP7	

SOIL										Sampling Point #:/ /
Profile D	escription:	(Describe to the dep	oth needed t	to document the i	indicator	or confirm	the abse	ence of indicato	rs)	
Depth	Horizon	Soil Matrix		Re	dox Feat	tures			a,a dip.	
			 0/				Loc ²	Texture	(pos/	Remarks
(in.)	<u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	LOC	rexture	neg)	(or use comment number)
2-0	<u> </u>			:		***************************************				
0-7	<u>H</u>	10402/1		2330 1837	· · · <u> ·</u> ·			511_	Neg	
			eggsel						,	
2-6	BI	2.5Y3/1						5:1	neg	
		 		87					<u> </u>	
6-10	<u>B7</u>	1/1/2/1	90	1004/1	10	RMF	RC	Sil	805	
<u> </u>	11/6			2116.116		KWII	Mile		100	
10-17-	07	20011 P	7.	17100011	20	10 105	11	Z:1		
		14 2/1	70 1	(*21K 7/~1	<u>30</u>	RME	Ma	261	<u>pos</u>	
¹ Type: C	= Concentra	tion, D = Depletion,	RM = Redu	ced Matrix, CS=0	Coated S	Sand Grain	ıs ² Locati	on: PL = Pore	Lining, RC =	Root Channel, M = Matrix
Hydric Sc	oil Indicators	s (check ones that	apply, meas	sure from top of	mineral	layers un	less oth	erwise noted)		
Standard	Indicators:	<i>*</i>		Indicators fo	or Proble	ematic Hvo	dric Soil	s ³ .		
		I (A1) (≥16″organic s	:: urface						e indicator o	f hydrophytic vegetation.
		et period of growing sea		Alaska	Color Ch	nange⁴ (TA	4)			cator of wetland
Hist	ic Epipedon ((A2) (8-16" organics,	sat'd,	A1I	: Almina C		5 \			an appropriate landscape
٠ ، ر	underlain by mi	ineral soil with chroma	≤2)	Alaska	Aipine 5	wales (TA	5)			present unless disturbed
Hyd	rogen Sulfide	e (A4) (within 12"of g	round	Alaska	Redox w	ith 2.5Y H	IIE		roblematic. /e details of (color change in Remarks.
s	urface; @	" in this pit							re details of t	color change in Nemarks.
Thic	k Dark Surfa	ce (A12)				vithout Hue	e 5Y or R	tedder		
	<u>. 4</u>			Unde	erlying La	ayer				
	ska Gleyed (A					.91 of 2007				
X Alas	ska Redox (A	14)		Supple	ement; ex	plain in Rem	narks)			
Alas	ska Gleyed P	ores (A15)								
Restrictive	e Layer (if pre	esent)		Drainage Cla	ss: <	SWPD				
Type:		none		Soil Map Unit			Hy	dric Soil Pres	ent? Y	∕es X No
Depth	(inches)				processor	-				
Comment	, , , , , , , , , , , , , , , , , , , ,						L			
1.	.s.									
2.										
3.										-77 1 3
HYDROLO	OGY :									
		ndicators (check on	es that appl	v. measure fron	n soil su	ırface):	Sec	ondary Indicate	rs (at least 2	2 are required)
200	9:	ny one indicator is s	1 SATE 1517 TO	,,				Water-Stained		
7	ce Water (A1			e Soil Cracks (B	6)		-	Drainage Patte	s vita di sa	
		/ (A2) (w/in 12")		ation Visible on A	•		-		4 1 -	ing Doots (C2) (within 40%)
						. ,	$\overline{}$	Presence of R		ving Roots (C3) (within 12")
<u>,</u> ★ Satura	ation (A3) (w	/in 12")	Sparse	ely Vegetated Co	ncave S	urface (B8	3) 🐣	pos. a,a ors).		
Water	r Marks (B1)		Marl D	eposits (B15)	_			Salt Deposits (
Sedin	nent Deposits	s (B2)	Hydrog	gen Sulfide Odor	(C1) (w/	/in 12")		Stunted or Stre	essed Plants	(D1)
	Deposits (B3)			eason Water Tab		· ·		Geomorphic P		in the sure of the
					() (,		Shallow Aquita		in the state of th
Algal	Mat or Crust	(B4)	Other	(explain)				(w/in 24", can		v/in 12")
iron D	Deposits (B5)									4) (caused by water)
								FAC Neutral T		
									. ,	# FACU+UPL dominants)
Field Obse	ervations (in.	from ground surface								
Surface W	/ater Present	? Yes	No X	Depth of water	er (in.) _					
Water Tab	le Present?	Yes 🔀	No	Depth to water	er (in.)	13				
		Seenin		depth but not yet						
Saturation	Drecent?	Yes	No	Depth to sat.		5	10/04	land Hydrolog	w Dracanta	Yes X No
			140	-			vvel	Janu Hyurolog	y rieseiit?	169 <u>- 1</u> NO
	capillary fring		onitoris - · ·	Epi Endo				(ailable:		
nescribe F	Recorded Da	ta (stream gauge, m	ionitoring w	en, aeriai photos	, previou	is inspection	ons), it av	raliable:		
Remarks:	1.1.1.	@ 12 C-00	. he i -	7 00 -11	a. a. a.	Il. Cale	- 011			
	Water	@13, Seep) in 0	m dmill	ENCHINA	un exter	0 01			



Site 43. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 43. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 43. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 43. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

WETLAND DETERMINATION DATA FORM -	- Alaska Region
Project: Ambler Mat, Sile Borough/City: NW A	whi Date: 9/8/12
Applicant/Owner:Out	Sampling Point #: 44
Investigator(s): Mac 5. Jan J. Firm: h	IDD AlII- I
Lat. (dec.°) 67. 15263 Long154.03009 ± NAD 83 Recorded c	on GPS #: Marked on man? X Field Man #
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	om: Flat Slope (%): Aspect:
	ncave NWI classification: Va (and
Photo nos./descriptions: 203-7 06 601, Jes Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circu	
Are Vegetation, Soil	answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No _X	
Hydric Soil Present? Yes No Within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.)	(3,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Dominance Test worksheet:
Tree Stratum (dbh≥ 3") Sp. Abs.Cov.% Dom? Ind. Species Abs.Cov.% Dom? Ind.	Number of Dominant Species
1. Pic slay 10 X FACU 5.	That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	Percent of Dominant Species 25 / (A/R)
Total free Cover.	That are OBL, FACW, or FAC:
50% of total cover:5 20% of total cover:2	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:Multiply by:
Cov.% Dom Ind. Cov.% Dom Ind.	OBL species X1=
1. Dry int 20 X FACU 7. Betran 10 FAC 2. Dic slay 10 FACU 8. Vace vit FAC	FACW species X2=/ 8
2. Pic slav 10 FACU 8. Vace vit FACU 8. Vace vit FACU 8. Vace vit FACU 8. Vace vit FACU FACU	FAC species <u>57</u>
4. Rho land 5 FAC 10. Sol ret 6 FAC	FACU species 60 X4=240
5. Pot frey 5 FAC 11.	UPL + NL species3 X5=/5
6. Sal rich 5 FACW12.	Column Totals: 129 (A) 444 (B)
Total Sapling/Shrub Cover:	
50% of total cover: 44.5 20% of total cover: 17.8	Prevalence Index = B/A = 3. 44
Herb Stratum	
Cov.% Dom Ind. Cov.% Dom Ind.	
1. (ar sci 20 + FACU12. 2. Sain any 1 FAC 13.	Hydrophytic Vegetation Indicators:
3. Fed ant 2 FAC 14.	No Dominance Test is>50%
4. Pea Sp. 2 NL 15.	No Prevalence Index is ≤3.0
5. Totors & PAC 16	Morphological Adaptations ¹ (Provide supporting
6. Ped and _ FACW 17.	data in Remarks or on a separate sheet)
7. Ped lang FACW 18.	Problematic Hydrophytic Vegetation ¹ (Explain)
8. Min arc 1	
9	1 Indicators of hydric call and water of hydrol
11	¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 30	,
50% of total cover:	Under white
Circular 1/10-ac plot ✓ or other plot dimension: % of bare ground:	Hydrophytic Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable)	<u></u>
Remarks: ford Freeze ~ 10 land ago, Most should won't leaves	

SOIL			1	1 1	Sampling Point #: 44		
Profile Description: (Describe to the depth needs	ed to document the indicator or confi	rm the abser	nce of indicate	ors)			
Depth Horizon Soil Matrix	Redox Features		20070	a,a dip.			
(in.) Name Color (moist) %	Color (moist) % Type ¹	Loc ²	_Texture_	(pos/ neg)	Remarks (or use comment number)		
30 0		\equiv		=	-		
On A DEVILOR		-	-				
2544/1.5 65	25483/4 5 RMF	RC	sil	1109	1044/4+		
L-19 B/		=					
¹ Type: C = Concentration, D = Depletion, RM = Re	duand Matrix CS=Casted Sand Sand Sand				-		
Hydric Soil Indicators (check ones that apply, ms				Lining, RC =	Root Channel, M = Matri		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Indicators for Problematic F						
N Histosol or Histel (A1) (≥16",sat'd during wet				e indicator o	of hydrophytic vegetation,		
period of growing season) Histic Epipedon (A2)(8-16", sat'd, underlain b	Alaska Color Change ⁴ (*) Alaska Alpine Swales (T		one hyd	primary ind rology, and	icator of wetland an appropriate landscape		
mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (w/in 12"of ground			or p	roblematic.	e present unless disturbed		
surface; @" in this pit	Alaska Redox with 2.5Y	Hue	⁴ Gi	ve details of	color change in Remarks.		
Thick Dark Surface (A12)	Alaska Gleyed without F Underlying Layer	ue 5Y or Re	dder				
Alaska Gleyed (A13)		Other (e.g., see p.91 of 2007					
Alaska Redox (A14)	Supplement; explain in F	(emarks)					
V Alaska Gleyed Pores (A15)	Drainage Class: WD						
	Drainage Class:						
		Unid	de Cell Dese		∨		
Type: Depth (inches)	Soil Map Unit Name:	Hydi	ric Soil Pres	ent?	/es No X		
Depth (inches)		Hydi	ric Soil Pres	ent?)	/esNo_X_		
Type:		Hydi	ric Soil Pres	ent?	/esNo_X_		
Type: Depth (inches) Comments: 1. * Morrix color 30% 2. 3. YDROLOGY	Soil Map Unit Name:				Yes No X		
Type: Depth (inches) Comments: A Montrix color 30% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient)	Soil Map Unit Name:	Secon	ndary Indicato /ater-Stained	ors (at least 2 Leaves (B9)	are required)		
Type:	Soil Map Unit Name: oply, msr from soil surface): face Soil Cracks (B6)	Secon W_ W	idary Indicato /ater-Stained rainage Patte	ors (at least 2 Leaves (B9) erns (B10)	are required)		
Type: Depth (inches) Comments: 1. * Moder x color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) W Surface Water (A1) High Water Table (A2) (w/in 12") Inun	Soil Map Unit Name: oply, msr from soil surface): face Soil Cracks (B6) dation Visible on Aerial Imagery (B7)	Second W N D D D D D D D D D D D D D D D D D D	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp	ors (at least 2 Leaves (B9) erns (B10) _ bheres on Liv	are required) ring Roots (C3) (w/in 12")		
Type:	Soil Map Unit Name: Oply, msr from soil surface): Face Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Insely Vegetated Concave Surface (B7)	Secon — — — W — D — D — O — 189	Idary Indicato /ater-Stained rainage Patte xid'd Rhizospresence of Re (pos. a.a or s	Leaves (B9) erns (B10) pheres on Liveduced Iron soil color cha	are required) ring Roots (C3) (w/in 12")		
Type: Depth (inches) Comments: 1. * Motrix color 30% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) W Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Mari	Soil Map Unit Name: oply, msr from soil surface): face Soil Cracks (B6) dation Visible on Aerial Imagery (B7)	Secon W W D D (8) P	ndary Indicato /ater-Stained rainage Patte xid'd Rhizospresence of Re pos. a.a or s alt Deposits (Leaves (B9) rns (B10) pheres on Liveduced Iron soil color cha C5)	ring Roots (C3) (w/in 12") (C4) nge w/in 12")		
Type:	Soil Map Unit Name: Oply, msr from soil surface): Face Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Insely Vegetated Concave Surface (B7) Deposits (B15)	Secon W W D D O Secon Secon	Idary Indicato /ater-Stained rainage Patte xid'd Rhizospresence of Re (pos. a.a or s	ers (at least 2 Leaves (B9) erns (B10) oheres on Liveduced Iron soil color cha C5) essed Plants	are required) ring Roots (C3) (w/in 12") (C4) nge w/in 12")		
Type: Depth (inches) Comments: 1. * Motrix color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) W Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Insely Vegetated Concave Surface (B7) Deposits (B15) Trogen Sulfide Odor (C1) (W/in 12")	Secon W W D O Si Si Si Si Si Si	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants position (D2) rd (D3)	ring Roots (C3) (w/in 12") (C4) nae w/in 12") (D1)		
Type: Depth (inches) Comments: 1. * Motrix color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) // Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) In Season Water Table (C2) (W/in 24")	Second W W D D D D D D D D D D D D D D D D D	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in 24", can	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron coil color cha C5) essed Plants position (D2) rd (D3) perch H2O v	ring Roots (C3) (w/in 12") (C4) nae w/in 12") (D1)		
Type: Depth (inches) Comments: X More X Lolo 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) V Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Other	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) In Season Water Table (C2) (W/in 24")	Secon W D O I8) P G G G M F F	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants persition (D2) rd (D3) perch H2O v hic Relief (D4)	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water)		
Type: Depth (inches) Comments: 1. * Motrix color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) // Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) V Iron Deposits (B5)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) In Season Water Table (C2) (W/in 24")	Secon W D O I8) P G G G M F F	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants persition (D2) rd (D3) perch H2O v hic Relief (D4)	ring Roots (C3) (w/in 12") (C4) nae w/in 12") (D1)		
Type: Depth (inches) Comments: 1. * Motrix color 20% 2. 33. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) W 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):	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) In Sees Soil Cracks (B15) In Sees Soil Cracks (B6) In Sees Soil Cracks (B6)	Secon W D O I8) P G G G M F F	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants persition (D2) rd (D3) perch H2O v hic Relief (D4)	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water)		
Type: Depth (inches) Comments: 1. * Motrix color 30% 2. 33. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (any one indicator is sufficient) Wetland	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Insely Vegetated Concave Surface (B7) Insely Vegetated Concave Surface (B7) Inselv Vegetated Co	Secon W D O I8) P G G G M F F	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants persition (D2) rd (D3) perch H2O v hic Relief (D4)	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water)		
Depth (inches)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) In Deposits (B15) In Deposits (B15) In Season Water Table (C2) (w/in 12") Ser (explain) Depth of water (in.)	Secon W D O I8) P G G G M F F	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Liveduced Iron soil color cha C5) essed Plants persition (D2) rd (D3) perch H2O v hic Relief (D4)	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water)		
Type: Depth (inches) Comments: 1. * Motrix color 30% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (check ones that ap	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Imagery Vegetated Concave Surface (B7) Season Sulfide Odor (C1) (W/in 12") Season Water Table (C2) (W/in 24") Ser (explain) Depth of water (in.) Depth to water (in.)	Secon W D D O Si Si G G Si (M F/ (# OB	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in.24", can Icrotopograp	ers (at least 2 Leaves (B9) erns (B10) cheres on Live educed Iron coil color cha C5) essed Plants position (D2) rd (D3) perch H2O v hic Relief (D- est (D5) minants > # 1	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water)		
Type: Depth (inches) Comments: 1. * Motor x color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Y 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) Volte Field Observations (in. from ground surface): Surface Water Present? Ves No Seeping in at that Saturation Present? Yes No Seeping in at that Saturation Present? Yes No Seliculates capillary fringe)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Imagery Vegetated Concave Surface (B1) Deposits (B15) Imagery (B7) Imagery (B7)	Second W N D D D D D D D D D D D D D D D D D D	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in 24", can Icrotopograp AC Neutral Te BL+FACW does and Hydrolog	ers (at least 2 Leaves (B9) erns (B10) cheres on Live educed Iron coil color cha C5) essed Plants position (D2) rd (D3) perch H2O v hic Relief (D- est (D5) minants > # 1	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water) FACU+UPL dominants)		
Type: Depth (inches) Comments: 1. * Motrix color 20% 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Wetland Hydrology Indicators (check ones that apprimary Indicators (any one indicator is sufficient) Surface Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Saturation Presents (B2) Dry- Water Marks (B1) Sediment Deposits (B2) Dry- Water Marks (B4) Wother Sediment Deposits (B4) Wother Water Marks (B4) Wother Seeping in at that apprimary indicators (check ones that apprimary indicators is sufficient) Separation (A3) (w/in 12") Sparation (A3) (w/in 12") Sparation (B4) Water Marks (B1) Sediment Deposits (B2) Dry- Water Marks (B4) Wother Seeping in at that apprimary indicators (check ones that apprimary indicators is sufficient)	Soil Map Unit Name: Soply, msr from soil surface): Sace Soil Cracks (B6) Idation Visible on Aerial Imagery (B7) Imagery Vegetated Concave Surface (B1) Deposits (B15) Imagery (B7) Imagery (B7)	Second W N D D D D D D D D D D D D D D D D D D	ndary Indicato /ater-Stained rainage Patte xid'd Rhizosp resence of Re (pos. α.α or s alt Deposits (tunted or Stre eomorphic Pe hallow Aquita w/in 24", can Icrotopograp AC Neutral Te BL+FACW does and Hydrolog	ers (at least 2 Leaves (B9) erns (B10) cheres on Live educed Iron coil color cha C5) essed Plants position (D2) rd (D3) perch H2O v hic Relief (D- est (D5) minants > # 1	ring Roots (C3) (w/in 12") (C4) nge w/in 12") (D1) v/in 12") 4) (caused by water) FACU+UPL dominants)		



Site 44. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 44. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 44. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 44. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

All Mich	01-1-
Project: Hubbar Mat Site Borough/City: Archiz	•
Applicant/Owner: DoT	Sampling Point #: 47
Investigator(s): Mac 5, Jan J. Firm: H	
Lat. (dec.°) 69, 15333 Long. 157-03276 ± NAD 83 Recorded of	on GPS #: Marked on map? X Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Shape across slope: linear/convex/concave Shape up/downslope: linear/convex/con	ncave NWI classification: <u>\$551/EM/C</u>
Photo nos./descriptions: 211-214 Soil, Veg Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	wet HGM type: Pht
Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circu	umstances" present? Yes X No
Are Vegetation	
SUMMARY OF FINDINGS Shows book fus sale	tundy
Hydrophytic Vegetation Present? Yes No Is the sampled are	ea Yes A No
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.)	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Sp. Abs.Cov.% Dom? Ind. Species Abs.Cov.% Dom? Ind.	Number of Dominant Species That are ORL FACW or FAC: (A)
1 5	That are OBL, FACW, or FAC:
2 6	Total Number of Dominant Species Across All Strata: (B)
3 7 8	Species Across All Strata.
Total Tree Cover:	Percent of Dominant Species 66 / (A/B)
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh) Cov.% Dom Ind. Cov.% Dom Ind.	Total-% Cover of: Multiply by:
Cov.% Dom Ind. Cov.% Dom Ind.	
2. Day int 20 X TACUS.	FACW species X2=
3. Galase 7 FAC 9.	FAC species X3=
4. Pot Fry 5 FAC 10.	FACU species35 X4= _/4/6
5. Vaccy n/ 2 FAC 11.	UPL + NL species X5=
6. Salput 2 PAC 12.	Column Totals:
Total Sapling/Shrub Cover: 86	0.06
50% of total cover: 43 20% of total cover: 17.2	Prevalence Index = B/A = 2,89
Herb Stratum	
Cov.% Dom Ind. Cov.% Dom Ind.	
1. Eri vag 10 × FACW12. 2. Car GC1 15 × FACW13.	Hydrophytic Vegetation Indicators:
2. (ar gun 15 × FACM13	Dominance Test is>50%
4. Equivar 3 FACW 15.	Prevalence Index is ≤3.0
5. Tat pus 1 FAC 16.	Morphological Adoutation 1/D id.
6. Ved to lang FACW 17.	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. Car of 2	Problematic Hydrophytic Vegetation¹ (Explain)
8. Eri ana 10 × OBC 19.	1 Toble matter Hydrophytic Vegetation (Explain)
9. Car age 5 DBC 20.	1
10 21 21 22.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 48	The state of the s
50% of total cover: 24 20% of total cover: 9.6	
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Hydrophytic Vegetation Yes No No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks:	

US Army Corps of Engineers

Alaska Version 2.0 Modified by HDR

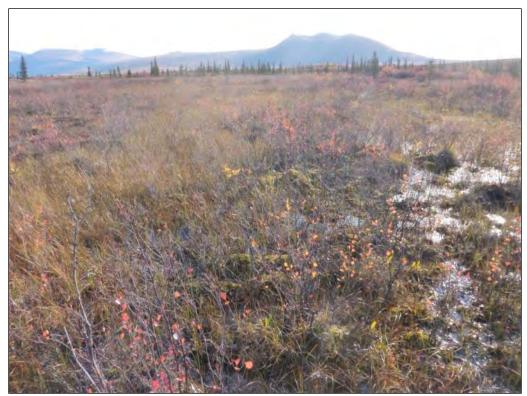
Profile Description: (Describe to the depth needed to document the indicator or confirm the above the depth Horizon Soil Matrix Redox Features (in.) Name Color (moist) % Color (moist) % Type¹ Loc² 100 100 100 100 100 100 100 100 100 10	α,α dip.				
(in.) Name Color (moist) % Color (moist) % Type¹ Loc² 1-D 0	Z Texture (pos/ Remarks neg) (or use comment number)				
0-2 H 1046511 = = = = = = = = = = = = = = = = = =	Z Texture (pos/ Remarks neg) (or use comment number)				
0-2 A 1046211	neg) (or use comment number)				
0-2 A 1048211 = = = =					
0-2 A 104R21					
2-16 B 4HN4/1 - = = = =	51 105				
2-16 B 4HN4/1 = = = = = = = = = = = = = = = = =	5i pos				
<u></u>	- 31 pos				
	·				
¹ Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ² Loca	ation: PL = Pore Lining, RC = Root Channel, M = Matri				
Hydric Soil Indicators (check ones that apply, msr from top of mineral layers unless otherw					
Indicators for Problematic Hydric So					
Historyl or Histel (A1) (>16" sat'd during wat					
period of growing season) Alaska Color Change ⁴ (TA4)	³ One indicator of hydrophytic vegetation, one primary indicator of wetland				
Histic Epipedon (A2)(8-16" sat'd underlain by	hydrology, and an appropriate landscape				
mineral soil with chroma ≤2) Alaska Alpine Swales (TA5)	position must be present unless disturbed				
Hydrogen Sulfide (A4) (w/in 12"of ground	or problematic. ⁴Give details of color change in Remarks.				
surface, @ in this pix					
Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or	Redder				
Underlying Layer					
Alaska Gleyed (A13) Other (e.g., see p.91 of 2007					
Alaska Redox (A14) Supplement; explain in Remarks)	l.				
Alaska Gleyed Pores (A15)					
Restrictive Layer (if present) Drainage Class:					
Type: Soil Map Unit Name: H	Hydric Soil Present? Yes 🔀 No				
Depth (inches)					
Comments:	1º barbatan sa des base made de				
1. no redox feedures and no red layer undereath, but glen soil w/ / 2. hydric guil. Plus positive	regionally introduces mentell in				
3.	c arpra arpra				
IVPROLOGY					
IYDROLOGY					
	econdary Indicators (at least 2 are required)				
Primary Indicators (any one indicator is sufficient)	_ Water-Stained Leaves (B9)				
Surface Water (A1) Surface Soil Cracks (B6)	_ Drainage Patterns (B10)				
High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7)	Oxid'd Rhizospheres on Living Roots (C3) (w/in 12")				
Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4)				
Water Marks (B1) Marl Deposits (B15)	(pos. a,a or soil color change w/in 12") _ Salt Deposits (C5)				
Sediment Deposits (B2) Hydrogen 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) (w/in 24", can perch H2O w/in 12")				
Algal Mat or Crust (B4) Other (explain)	CONTRACT OF THE POPULATION OF THE PROPERTY OF				
Algal Mat or Crust (B4) Other (explain)	_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4) Other (explain) Iron Deposits (B5) (#	_ Mlcrotopographic Relief (D4) (caused by water)				
Algal Mat or Crust (B4)Other (explain)Iron Deposits (B5) (# Field Observations (in. from ground surface):	_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4) Other (explain) (# Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) (_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4) Other (explain) (# Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) (_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4) Other (explain) (# Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) (_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4)Other (explain) Iron Deposits (B5) (# 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:	_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5) OBL+FACW dominants > # FACU+UPL dominants)				
Algal Mat or Crust (B4)Other (explain) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Water Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled: Saturation Present? Yes No Depth to sat. (in.) We	_ MIcrotopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5)				
Algal Mat or Crust (B4)Other (explain) Iron Deposits (B5) (# 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:	MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) : OBL+FACW dominants > # FACU+UPL dominants) etland Hydrology Present? Yes No				



Site 47. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 47. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 47. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 47. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

Project: Amb	wher Mut	Site		_Borough/	City:	`Nb	Ante	Date:	9/8/12
Applicant/Owner:_	Dor					*		Sampling	g Point #: <u>5</u> そ
Investigator(s):	May S. D.	2 J.				Firm: H	HDR Alaska, Inc.	AMB 19	
Lat. (dec.°)	15748	Long. 🖺	7.04053				n GPS #: 🕍 Ma	arked on map?	Field Man #
Subregion (circle	one): SE South	ncentral W	Jestern Aleutiar	n Interior	Northern	Landfo	rm: Plat	Slope (%)	Aspect:
Local relief: Shape	across slope: Ji	near/ conv	ex / concave §	Shape up/d	lownslope:	linear / c	onvex / concave	NWI classifica	tion: //o/ca-/
Photo nos./descrip	otions: <u>233-</u>	236	Soil very		Camer	a #:	Veg Type (Viered	k Level 4 or oth	ner):
Are climatic / hydr	ologic conditions	on the site	typical for this tir	ne of year?	Yes:	No:	If no. explain.	vet	HGM type:
Are Vegetation/	<u>/</u> , Soil <u></u> <u></u>	lydrology _	∕significantly	disturbed?	Are "Nor	mal Circu	ımstances" preseni	? Yes ×No	
Are Vegetation _/	<u>√,</u> Soil <u>∧</u> /, or H	lydrology _	<u>∧</u> naturally pro	blematic?	If needed	, explain	answers here.		·····
SUMMARY OF					Comin)	,		
Hydrophytic Veg	etation Present?	Yes _	X						
Hydric Soil Prese	:nt?	Yes_	No <u></u>	5	Is the san within a	•		No. +	
Wetland Hydrolog	gy Present?	Yes_	No _ [_]			80 Te	Remarks (e.g.		
VEGETATION (Jse scientific nan	nes.) Estim		` _	elative cove	er) % car			
1000				1	0.00.00	517. 70 Cai	Dominance Tes	t worksheet:	status.
Tree Stratum (dt Species	oh≥ 3″) Cov.% Domi	? Ind	Species	Cov %	6 Dom?	Ind.	Number of Demi		2
1			5.		0 DOM:	ma.	Number of Domin		3
2			6.				Total Number of	Dominant	1 -
3			7				Species Across		4
4		-	8		_	* 10			
	Te	otal Tree C	over:				Percent of Domir That are OBL, FA		75%
50% of total cove	ər:		20% of t	otal cover:			Prevalence Inde		Programme in the second
Sapling/Shrub Str	atum (woody pla	nts < 3" db					Total % (Cover of:	Multiply by
A	s.Cov.% Dom?	Ind.		Abs.Cov.	% Dom?	Ind.	OBL species		X1=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
1. 1)00 101	25 1		7. Sul ret		-	FAC	FACW species	7	X1=
2. Pot fra 3. Vacali	20 ×	FAC 8	3 1		-	FAC	FAC species	86	$x_{2} = \frac{1}{258}$
4. Pic ala	5 —		9. <u>Hr rub</u> D.		-	FIRCH	-	22	
5. Bet-nan	10	FAC 11		`			FACU species	- 7	X4= <u>178</u> X5= 35
6. Rho lapp	6	FAC 12	<u> </u>			2.3,20%	UPL + NL specie Column Totals:	128 m	427
	Total Saplir	ng/Shruh C	over: 8Z				Report 1974	120 (A)	7.5
50% of to	tal cover:			- otal cover:	16.4		Describes as I	ndex = B/A =	3 34
Herb Stratum	ta, 55701.	• •	20 /0 01 (0	Jiai Covei.	,		Prevalence in	idex = B/A =	J 1
Ab	s.Cov.% Dom?		eren ar in der eren eren eren eren eren eren eren	Abs. Cov.%	6 Dom?	Ind.			
1. Car mic	15 x	FAC 12	2				Hydrophytic Voc	votation ludica	(· · · · · · · · · · · · · · · · · · ·
2. Min arc	<u> </u>	<u>UPL</u> 13	3				Hydrophytic Veg		tors:
3. (ones 40		<u>NC</u> 14	• <u></u>		-		No Prevalence	e Test is>50%	
5. Ped land	- -	<u>FAC</u> 15). <u> </u>					e index is \$5.0	:
6. Fest alt	15 X	FA (17	·				Morpholog	ical Adaptation	s ¹ (Provide suppo
7. Car sal	5	FACU)18			***************************************				separate sheet)
8. Ven sp.	2	NL 19					Problemat	ic Hydrophytic \	egetation¹ (Expla
9. 13. plu	<u> </u>	FAC 20							
10. Sax rel	<u> </u>	FAC 21	*				1 Indicators of hyd	Iric soil and wet	land hydrology m
11		22			-		be present unless	disturbed or pr	oblematic.
		er 3	over: 46						
50% of to	tal cover:	5	20% of to	otal cover:	9.2		Hydrophytic		
Circular 1/10-ac pl	ot 🔽 or other p	olot dimens	ion:	% of bare	around:		Vegetation Present?	Yes	_ No
% Cover of Wetlan	id Bryophytes		% Total Cover	of Bryoph	ytes	%	riesentr	50m	
(where applicat	.1\								

SOIL									Sampling Point #: <u>りナ</u>
Profile Description	: (Describe to the de	pth needed t	o document the i	ndicator	or confirm	the abse	nce of indicato	ors)	
Depth Horizon	Soil Matrix		Red	dox Feat	tures			α,α dip.	
(in.) (opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	_Texture_	(pos/ neg)	Remarks (or use comment number)
3-0 <u>0i</u>					t				
0-3 A	104R4/2			· <u></u>	- <u> </u>			neg	<u> </u>
3-16 B	104R5(1	75 _					Sal	nea	
	2.5Y 5/4 2.5YR 3/H	<u>30</u> _	 						
¹ Type: C = Concent	tration. D = Depletion		ced Matrix. CS=C	coated S	and Grains	s ² Locatio	n: PL = Pore	Linina. RC =	Root Channel, M = Matrix
	ors (check ones that								root onamo, w water
Standard Indicator		uppiy, mous	Indicators fo				_	•	
	stel (A1) (≥16″organic	surface						e indicator d	of hydrophytic vegetation,
	wet period of growing se		Alaska (Color Ch	ıange⁴ (TA₄	4)			icator of wetland
	n (A2) (8-16" organics		Alaska A	Alpine S	wales (TA5	i)			an appropriate landscape
Hydrogen Sulf	mineral soil with chroma ide (A4) (within 12"of e	•	- Carlotte		rith 2.5Y Hu	-	or p	roblematic.	e present unless disturbed color change in Remarks.
Thick Dark Su				Gleyed v	vithout Hue	5Y or Re			
Alaska Gleyed			Other (e.	.g., see p	.91 of 2007 plain in Rem	arke)			
Alaska Redox	•		оцррге	ment, ex	piaini in ixemi	aiks)			
Alaska Gleyed			Desires Clas		-	2.7			·
Restrictive Layer (if	present) MMO		Drainage Clas		WD	Llve	duia Cail Dana	40	/a= \\
Type: Depth (inches)	1,5.0		Soil Map Unit	ivaille.	ta de la composição de la	Пус	dric Soil Pres	entr	/es NoX
Comments:	pure soud	, 1				rina. Nasaran	, ,		
2. Pedox feetu 3.	nes bright late o	funder d	rains through	L here	when	ice m	uls in		
- , - , - , - , - , - , - , - , - , - ,									
HYDROLOGY	Indicators (check or	nos that apply	, massura from	ooil ou			المحالية المحالية	··· /=+ = ==+ /	
The second secon	(any one indicator is		y, measure from	i Soli Su	rrace):		ndary indicato Water-Stained		2 are required)
N Surface Water (e Soil Cracks (B6	:)		77	vvater-Staineu Drainage Patte)
	le (A2) (w/in 12")	* å	tion Visible on A		gen/ (R7)	ĝ		F-1	ving Roots (C3) (within 12")
Saturation (A3)		I	ly Vegetated Co				Presence of R	educed Iron	(C4)
Water Marks (B	.i	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	eposits (B15)			-	(pos. α.α or s Salt Deposits ((C5)	Burgara Barangan
Sediment Depos			en Sulfide Odor		*		Stunted or Stre		(D1)
Drift Deposits (E	33)	Dry-Se	ason Water Tabl	e (C2) (w/in 24")		Geomorphic P		
Algal Mat or Cru	st (B4)	Other (explain)				Shallow Aquita (w/in 24", can		w/in 12")
Iron Deposits (B	5)					-37			4) (caused by water)
	•						FAC Neutral T	est (D5)	# FACU+UPL dominants)
Field Observations (i	n. from ground surfac								
Surface Water Prese	ent? Yes	No X	Depth of wate						
Water Table Present	? Yes	No 🔏	Depth to wate	r (in.)			b.		
	Seepir	ng in at that d	lepth but not yet	filled?: _					
Saturation Present?	Yes	No 🔀	Depth to sat. ((in.)		Wetl	and Hydrolog	y Present?	Yes No 🔀
(includes capillary fri	- .		Epi Endo	Unknov	٧n				
Describe Recorded [Data (stream gauge, r	nonitoring we	ell, aerial photos,	previou	s inspectio	ns), if ava	ailable:		
Remarks:		V + 1							
nomants.									



Site 57. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 57. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 57. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 57. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambles Met Site Borough/City: 1/w And	Date: 9/8//2
Applicant/Owner: DOT - PF	Sampling Point #: /03
Investigator(s): Mac 5 Jan J. Firm:	HDP Alaska Ina
Lat. (dec.°) 64-15289 Long. 164-04422 ± NAD 83 Recorded of	on GPS #: Y Marked on map? Field Map #
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: Slope (%); - Aspect:
Local relief: Shape across slope linear / convex / concave Shape up/downslope: linear/	convex / concave NWI classification: PEN 1/5 </td
	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. Wet HGM type: Plut
Are Vegetation <u>M</u> , Soil <u>M</u> , or Hydrology <u>M</u> significantly disturbed? Are "Normal Circ	umstances" present? Yes 🔀 No
Are Vegetation M , Soil M , or Hydrology M naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Godge truben - wet	
Hydrophytic Vegetation Present? Yes You No Is the sampled are	
Hydric Soil Present? Yes No within a wetland	
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n 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	Species Across All Strata:(B)
4 8	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC:
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species X1=
2. free rub 1 FACW 8. Vucc 41, 10 X FAC	FACW species 16 x2= 32
3. Sal orc 5 PIC 9.	FAC species 49 X3= 147
4. Between 5 FAC 10.	FACU species 35 X4= 140
5. Cho lago 3 FAC 11.	UPL + NL species 5 X5= 25
6. Dry of 15 X FAW 12.	Column Totals: 123 (A) 362 (B)
Total Sapling/Shrub Cover: 6	
50% of total cover: 35.5 20% of total cover: 13.4	Prevalence Index = B/A = 2.94
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Cor cai 20 X FACU12 Enisch 2 OBC 2. Cor mic 8 X FAC 13.	Hydrophytic Vegetation Indicators:
2. Car mic 8 13	Dominance Test is>50%
3. Fgn var 5 PACV 14. 4. Car gyn 5 OBC 15.	Prevalence Index is ≤3.0
5. Car agu 10 × 013 1.16.	Marshalada Adamata a 100
6. 6rush st. 5 NL 17.	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7. Ked svy FACW18.	Problematic Hydrophytic Vegetation ¹ (Explain)
8. Eqn fly 1 OBC 19.	- Troblematic Hydrophytic Vegetation (Explain)
9. Car say 7 FACW 20. 10. Sung off I FACW 21.	1
11. Jun tri 1 Pacu 22.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 66	problematic.
12 2	* ***
20% of total cover.	Hydrophytic Vegetation Yes T No
Circular 1/10-ac plot or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	·
Remarks:	

Profile Description: (Describe to the de								
	epth neede	d to document th	e indicato	r or confirm	the abse	nce of indicate	ors)	The state of the s
Depth Horizon Soil Matrix		F	Redox Fea	atures			α,α dip.	
(in.) (opt.) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	(pos/	Remarks
(iii.) (opt.)	20	COIOI (IIIOISI)	_70	Type	<u> </u>	Texture	<u>neg)</u>	(or use comment number
20 <u>00</u>				:				
<u> </u>		err .						
0-3 <u>A 10423/1</u>						<u> </u>	neh	
3-4 Deb				.,. 4	<u>,,518.5545</u>			75 x 1
30-8 BY QU/1	\$0	104R4/4	20	RMF	Re	511	nes	
		<u> </u>		· ' 				
8-18 B2 1084(1	90	2,544/4	10	RMF	01	311	053	• · · · · · · · · · · · · · · · · · · ·
		5. 44,473		V		DI - Dara	Libra BC	- Doel Chadad M 4 A44
¹ Type: C = Concentration, D = Depletion			-			and the state of t		= Root Channel, M = Mat
Hydric Soil Indicators (check ones that	apply, m e	easure from top	of minera	il layers un	less othe	erwise noted)	:	
Standard Indicators:		Indicators	for Probl	ematic Hyd	dric Soils	:		
Histosol or Histel (A1) (≥16"organic	surface,	Δlask	a Color C	hange⁴ (TA	4)	996		of hydrophytic vegetation,
sat'd during wet period of growing se	and the second	The American			ti kana s			dicator of wetland an appropriate landscape
Histic Epipedon (A2) (8-16" organics underlain by mineral soil with chroma		Alask	a Alpine S	Swales (TA	5)	-		e present unless disturbe
Hydrogen Sulfide (A4) (within 12"of						or p	roblematic.	
surface; @" in this pit	ground	Alask	a Redox v	vith 2.5Y H	ue	⁴Giv	ve details of	f color change in Remarks
Thick Dark Surface (A12)				without Hue	e 5Y or R	edder		
			derlying L					
Alaska Gleyed (A13)	* "			p.91 of 2007 oplain in Rem	arke)			
X Alaska Redox (A14)		Sup	piement, ex	cpiaiii iii rceii	iai ka)			
Alaska Gleyed Pores (A15)					·			
Restrictive Layer (if present)		Drainage C	lass:	PD				
Type:	<u> </u>	Soil Map U	nit Name:	, –	Нус	dric Soil Pres	ent?	Yes No
Depth (inches)		2.						X 18.00
					\$			
2. 10 10 10 10 10 10 10 10 10 10 10 10 10	es ^t							
2. 3. YDROLOGY	wi i i	2011			-			
2. 3. YDROLOGY Wetland Hydrology Indicators (check o	(4) (4)	병사 등 기계	om soil s	urface):		982563 DASCUST		2 are required)
2. 3. YDROLOGY Wetland Hydrology Indicators (check o Primary Indicators (any one indicator is	sufficient)	75, 11 1		urface):		Water-Stained	Leaves (B9	
2. 3. YDROLOGY Wetland Hydrology Indicators (check o Primary Indicators (any one indicator is Surface Water (A1)	sufficient) Surl	face Soil Cracks	(B6)			Water-Stained Drainage Patte	Leaves (B9 erns (B10) _))
2. 3. YDROLOGY Wetland Hydrology Indicators (check o Primary Indicators (any one indicator is	sufficient) Surl	75, 11 1	(B6)			Water-Stained Drainage Patte Oxid'd Rhizosp	Leaves (B9 erns (B10) _ oheres on Li	iving Roots (C3) (within 12
2. 3. YDROLOGY Wetland Hydrology Indicators (check o Primary Indicators (any one indicator is Surface Water (A1)	sufficient) Surf	face Soil Cracks	(B6) ı Aerial Im	agery (B7)		Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R	Leaves (B9 erns (B10) _ oheres on Li educed Iron	iving Roots (C3) (within 12
2. 3. YDROLOGY Wetland Hydrology Indicators (check o Primary Indicators (any one indicator is Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12")	sufficient)SurfInur	face Soil Cracks idation Visible on rsely Vegetated ((B6) ı Aerial Im	agery (B7)	—————————————————————————————————————	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (ροs. α,α or s	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch	iving Roots (C3) (within 12
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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) Surf Inur Spa Mar	face Soil Cracks adation Visible on rsely Vegetated (I Deposits (B15)	(B6) Aerial Im Concave S	agery (B7) Surface (B8		Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5)	iving Roots (C3) (within 12 I (C4) ange w/in 12")
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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) Surficient Inur Spa Mar Hyd	face Soil Cracks idation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")		Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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) Surficient Surficient Inur Spa Mar Hyd Dry-	face Soil Cracks adation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od Season Water T	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")		Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2)	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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) Surficient Surficient Inur Spa Mar Hyd Dry-	face Soil Cracks idation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")		Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita	Leaves (BS erns (B10) _ observed on Lieduced Iron soil color ch (C5) essed Plants osition (D2) ard (D3)	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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)	sufficient) Surficient Surficient Inur Spa Mar Hyd Dry-	face Soil Cracks adation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od Season Water T	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")) 🗷	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O	iving Roots (C3) (within 12' i (C4) ange w/in 12") s (D1) w/in 12")
2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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)	sufficient) Surficient Surficient Inur Spa Mar Hyd Dry-	face Soil Cracks adation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od Season Water T	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")) 🗷	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (Win 24", can	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1)
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2. 3. YDROLOGY Wetland Hydrology Indicators (check o 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) Surficient Surficient Inur Spa Mar Hyd Dry-	face Soil Cracks adation Visible on rsely Vegetated (I Deposits (B15) rogen Sulfide Od Season Water T	(B6) I Aerial Im Concave S	agery (B7) Surface (B8 //in 12")) 🗷	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (Win 24", can MIcrotopograp FAC Neutral T	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5)	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water)
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YDROLOGY Wetland 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) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface Surface Water Present? Yes	sufficient) Surficient Inur Spa Mar Hyd Dry- Othe	face Soil Cracks Idation Visible on Insely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S Ior (C1) (w able (C2)	agery (B7) Surface (B8 //in 12") (w/in 24")) 🗷	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (Win 24", can MIcrotopograp FAC Neutral T	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5)	iving Roots (C3) (within 12 I (C4) ange w/in 12") s (D1) w/in 12") D4) (caused by water)
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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 Surface Water Present? Water Table Present? Yes Seepi	sufficient) Surficient Surficient Inur Spa Mar Hyd Dry- Othe ce): No ng in at the	face Soil Cracks Idation Visible on Irsely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S lor (C1) (w able (C2) ater (in.) _ ret filled?:	agery (B7) Surface (B8 //in 12") (w/in 24")) Z	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (Win 24", can MIcrotopograp FAC Neutral T (# OBL+FACW	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5) dominants	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water) > #FACU+UPL dominants)
2. 3. IYDROLOGY Wetland 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) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface Surface Water Present? Water Table Present? Yes Seepil Saturation Present?	sufficient) Surficient Surficient Spa Mar Hyd Dry- Othe	face Soil Cracks Idation Visible on Irsely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S lor (C1) (w able (C2) ater (in.) _ ret filled?: at. (in.) _	agery (B7) Surface (B8 //in 12") (w/in 24")) Z	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (Win 24", can MIcrotopograp FAC Neutral T	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5) dominants	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") D4) (caused by water) > #FACU+UPL dominants)
YDROLOGY Wetland 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) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface Surface Water Present? Water Table Present? Yes Seepil Saturation Present? Yes (includes capillary fringe)	sufficient) Surficient Surficient Spa Mar Hyd Dry- Othe ce): No ng in at the	face Soil Cracks Idation Visible on Irsely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S lor (C1) (w able (C2) ater (in.) _ ret filled?: at. (in.) _ O Unkno	agery (B7) Surface (B8 //in 12") (w/in 24") // // // // // // // // // // // //) Wetl	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can MIcrotopograp FAC Neutral T (# OBL+FACW	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5) dominants	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water) > #FACU+UPL dominants)
YDROLOGY Wetland 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) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface Surface Water Present? Water Table Present? Yes Seepil Saturation Present? Yes	sufficient) Surficient Surficient Spa Mar Hyd Dry- Othe ce): No ng in at the	face Soil Cracks Idation Visible on Irsely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S lor (C1) (w able (C2) ater (in.) _ ret filled?: at. (in.) _ O Unkno	agery (B7) Surface (B8 //in 12") (w/in 24") // // // // // // // // // // // //) Wetl	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can MIcrotopograp FAC Neutral T (# OBL+FACW	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5) dominants	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water) > #FACU+UPL dominants)
YDROLOGY Wetland 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) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface Surface Water Present? Water Table Present? Yes Seepil Saturation Present? Yes (includes capillary fringe)	sufficient) Surficient Surficient Spa Mar Hyd Dry- Othe ce): No ng in at the	face Soil Cracks Idation Visible on Irsely Vegetated (I I Deposits (B15) I	(B6) Aerial Im Concave S lor (C1) (w able (C2) ater (in.) _ ret filled?: at. (in.) _ O Unkno	agery (B7) Surface (B8 //in 12") (w/in 24") // // // // // // // // // // // //) Wetl	Water-Stained Drainage Patte Oxid'd Rhizosp Presence of R (pos. α,α or s Salt Deposits (Stunted or Stre Geomorphic P Shallow Aquita (w/in 24", can MIcrotopograp FAC Neutral T (# OBL+FACW	Leaves (B9 erns (B10) _ oheres on Li educed Iron soil color ch (C5) essed Plants osition (D2) ard (D3) perch H2O hic Relief (D est (D5) dominants	iving Roots (C3) (within 12 (C4) ange w/in 12") s (D1) w/in 12") 04) (caused by water) > #FACU+UPL dominants)



Site 63. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 63. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 63. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 8, 2012.



Site 63. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 8, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

Project: Amber Mat Site Cond Borough/City: WW A	1 Date: 9/9/17
Applicant/Owner: DOT NPF	Sampling Point #:69
A sunda wage	(DE n-)
Lat. (dec.°) 67.12069 Long. 154.7852° ± NAD 83 Recorded o	n GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	rm:Slope (%):/-Z Aspect: <u>WW</u>
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / c	onvex / concave NWI classification:
Photo nos./descriptions: 261 - 264 soil Ves Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circu	• • • • • • • • • • • • • • • • • • • •
Are Vegetation $\overline{\mathcal{N}}$, Soil $\overline{\mathcal{N}}$, or Hydrology $\overline{\mathcal{N}}$ naturally problematic? If needed, explain	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No	
Is the sampled are	
with the second transfer of the second transf	
Wetland Hydrology Present? Yes No X	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. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata: (B)
4 8	
Total Tree Cover: 20	Percent of Dominant Species That are OBL, FACW, or FAC: 57 / (A/B)
50% of total cover: 4 - 0	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	
1. Picgla 7 FACU 7. Sa ret 8 FAC	OBL species X1=
2. Poter 16 × FAC 8. Arc rub 5 PACN 3. Jun com 2 UPL 9. Sal rich 5 FACN	FACW species X2=
3. Jun com 2 UPL 9. Sal rich 5 FACW 4. Lin box 3 UPL 10. Sal ala 10 x FAC	FAC species
4. <u>Lin box</u> 3 <u>UPL 10. Sul gla 10 & FAC</u>	FACU species
5. Vaccus 25 X FAC 11. The spar I FACU 6. Ros aci 15 X FACU12. Dog int 2 FACU	UPL + NL species
6. Robaci 15 & Hev12. Dry int 2 FACU	Column Totals: 157 (A) 532 (B)
het slan 5 FAC Total Sapling/Shrub Cover: 98	(-/
50% of total cover: 49 20% of total cover: 19,6	Prevalence Index = B/A = 3.37
Herb Stratum	Prevalence index – B/A –
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. San ang 2 FAC 12. Cer mem 1 FACW	
2. Hed alp 2 UPC 13.	Hydrophytic Vegetation Indicators:
3. Equary 5 FAC14.	Dominance Test is>50%
4. Car and 2 FACU15.	No Prevalence Index is ≤3.0
5. Car bry 10 X FAC 16.	Morphological Adaptations ¹ (Provide supporting
6. Rubord FAC 17.	data in Remarks or on a separate sheet)
7. Gal bor EACU18	Problematic Hydrophytic Vegetation ¹ (Explain)
8. Yor sci 10 × FACU 19.	(Explain)
9. Fac var 2 FACW 20.	1
10. Gara 4 ft NL 21	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
	so present unless disturbed of problematic.
Total Herb Cover: 39	
50% of total cover: 19.5 20% of total cover: 7.8	Hydrophytic
	Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
Circular 1/10-ac plot \checkmark or other plot dimension: % of bare ground:	Present?

SOIL									Sampling Point #:
Profile Description:	(Describe to the de	epth needed	to document the	indicator	or confirm	n the abse	nce of indicate	ors)	2.5gs
Depth Horizon	Soil Matrix		Re	edox Fea	tures			α,α dip.	
(in.) (opt.) 2-0	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	(pos/ neg)	<u>Remarks</u> (or use comment number)
9-3 A					+ <u>1 </u>		51		
3-10 BT	5Y3/1	_ 7	54R313	10	RME	RE	Sil	Neg	
10-20 BZ	10124/1	1	DH1313	5	RMF	RC	sil	nes	
¹ Type: C = Concentrat	ion, D = Depletion	, RM = Redu	ıced Matrix, CS=	 Coated S	Sand Grain	 ns ² Locatio	on: PL = Pore	Lining, RC	= Root Channel, M = Matri
Hydric Soil Indicators									
Standard Indicators:		. чрр.у, точ	Indicators fo		- 1		さいしん ともんしき	y Period (1997) Wilang dan di Kabupatèn di K	
Histosol or Histel	(A1) (≥16″organic : period of growing se	surface,			nange⁴ (TA		³Oı		of hydrophytic vegetation,
Histic Epipedon (A2) (8-16" organics	s, saťd,			wales (TA		hyd	Irology, and	dicator of wetland an appropriate landscape be present unless disturbed
•	neral soil with chroma (A4) (within 12"of (•			ith 2.5Y H		or	oroblematic.	
Thick Dark Surfac	•			Gleyed verlying La	vithout Hu	e 5Y or Re			5 ,
Alaska Gleyed (A	13)				_				
Alaska Redox (A	•				.91 of 2007 plain in Ren				
Alaska Gleyed Po	•					,			
Restrictive Layer (if pre			Drainage Cla	ass.	מעו	est v.			earning winds.
Type:	_ '		Soil Map Uni		UU	Hvo	dric Soil Pres	ent?	Yes No 📉
Depth (inches)				7		'''		•	
Comments:		144	pires.						
•									
•									
·		53							
'DROLOGY Vetland Hydrology In	dicators (check o	noe that ann	ly moneuro from	m soil a	refooo\r		بالمسال سمامي	/ !	0
rimary Indicators (ar			y, measure nor	iii soii st	iliace).	1 1	Mater-Stained		2 are required)
✓ Surface Water (A1)		4	e Soil Cracks (B	86)			Orainage Patte	N 1 4 4 5 6	7)
High Water Table (ation Visible on A		agery (B7)		_	911	iving Roots (C3) (within 12"
Saturation (A3) (w/		•	ely Vegetated Co	61			Presence of R		
Water Marks (B1)	/		peposits (B15)	SHOUTE C	anace (De	'			ange w/in 12")
Sediment Deposits	(B2)		gen Sulfide Odor	r (C1) (w	(in 12")	-	Salt Deposits (Stunted or Stre	. ,	o (D1)
Drift Deposits (B3)	(62)	Q	eason Water Tab				Seomorphic P		New 1
_ Billit Boboolio (Bo)	· (D4)) (OZ) (w///// 24 /	T .	Shallow Aquita	100000	
Algol Mat or Crust	,D4)	Other	(explain)			\(\bar{\bar{\bar{\bar{\bar{\bar{\bar{	(w/in 24", can	perch H2O	
Algal Mat or Crust						- E /			O4) (caused by water)
Algal Mat or Crust							FAC Neutral T # OBL+FACV #)	est (D5) V dominants	> # FACU+UPI_dominante\
Iron Deposits (B5)	rom ground surfac	ce):					# OBL+FACV	est (D5) V dominants	> # FACU+UPL dominants)
Iron Deposits (B5)	•	ce): No	Depth of wate	er (in.)			-AC Neutral 1 (# OBL+FACV	est (D5) V dominants	> # FACU+UPL dominants)
Iron Deposits (B5) Field Observations (in. Surface Water Present?		·	Depth of wate				# OBL+FACV	est (D5) V dominants	> # FACU+UPL dominants)
	Yes	No No	•	er (in.)			(# OBL+FACV	est (D5) V dominants	> # FACU+UPL dominants)

Epi Endo Unknown

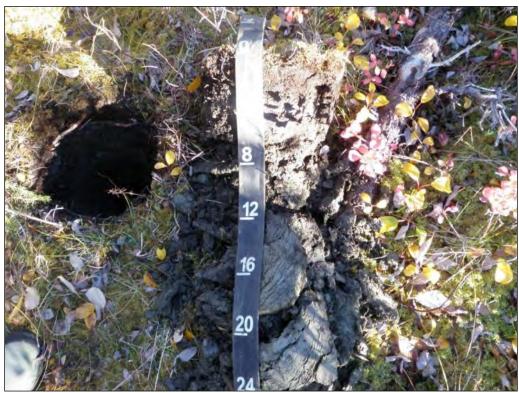
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Year of highest recorded reunfall. No hydro by milicatures

(includes capillary fringe)



Site 69. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 69. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 69. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 69. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: An her Mail Site Road Borough/City: NW 1	Archic Date: 9/9/12
Applicant/Owner: // // /	Sampling Point #: _ どうつ
Investigator(s): Mac S., Jan J. Firm: F	HDR Alaska, Inc. Busile GPS point 69
Lat. (dec.°) 67.17160 Long. 157.78596 ± NAD 83 Recorded o	in GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	orm: <u> hillsale</u> Slope (%): 2 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave	convex / concave NWI classification: Mb (and
Photo nos./descriptions: 265-268 gail, ven Camera #:	_ Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. HGM type:
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circu	umstances" present? Yes No
Are Vegetation _A/Soil _\(\int \), or Hydrology _\(M \) naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS	-
Hydrophytic Vegetation Present? Yes X No Is the sampled are	•
Hydric Soil Present? Yes No within a wetland?	ea viga ide Pres No X
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	n 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. Pr mar 10 x FACW 5.	That are OBL, FACW, or FAC:(A)
2 6 6	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: 80 /(A/B)
50% of total cover: 20% of total cover: 2	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. Allatro 6 FACU 7. Sal slea 5 FAC	1) -7
2. <u>led dec</u> 10 FACW 8	
3. Vacc vit 5 FAC 9	
KAE .	FACO species X4=
5. Empaig 3 - 470 11	UPL + NL species X5=
	Column Totals: 107 (A) 283 (B)
Total Sapling/Shrub Cover: 74	Prevalence Index = B/A = 2,64
50% of total cover: 37 20% of total cover: 14.8	Prevalence Index = B/A =
Herb Stratum Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	ee A
Abs. Cov. % Dom? Ind. Abs. Cov. % Dom? Ind.	A Report O
2. Fgn arv 6 FAC 13.	Hydrophytic Vegetation Indicators:
3. Car men FACV14.	Dominance Test is>50%
4. Cur and FACN 15.	Prevalence Index is ≤3.0
5. <u>Car hin</u> 16	Morphological Adaptations ¹ (Provide supporting
6. Cha ana I FACU17.	data in Remarks or on a separate sheet)
7. Carsy 2 X FACU 18.	Problematic Hydrophytic Vegetation¹ (Explain)
8	
9	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 13	·
1.5	Livedness houting
50% of total cover:	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes %	Present?
(where applicable)	
Remarks: Lizhen	1

OIL								Sampling Point #: <i>_6</i> 9
Profile Description:	(Describe to the dep	oth needed to d	ocument the in	dicator or conf	firm the a	absence of ind	icators)	
Depth Horizon	Soil Matrix		Red	ox Features			α,α dip.	
(in.), (opt.)	Color (moist)	<u>%</u> <u>Col</u>	or (moist)	% Type ¹	1 <u>Lo</u>	c² <u>Textur</u>	e (pos/ neg)	Remarks (or use comment number)
5-0 <u>0i</u>		751.7		- 1 1				
0-4 A	1048312					sil	_ <u></u>	
4-15 B/C	1/.					Sand		
	- Varizante						- neg	full sand
1								
								= Root Channel, M = Matrix
Hydric Soil Indicator				Na in the same			ted):	
Standard Indicators:			Indicators for	Problematic I	Hydric S	Soils':	3	. Bargalak Jan 1994 .
	el (A1) (≥16″organic st et period of growing sea		<u>//</u> Alaska C	olor Change⁴ ((TA4)			of hydrophytic vegetation, dicator of wetland
	(A2) (8-16" organics,	•	di					d an appropriate landscape
underlain by m	nineral soil with chroma le (A4) (within 12"of g	≤2)	and the state of t	Ipine Swales (-		position must or problemation	be present unless disturbed
	" in this pit	e gerrania	Haska R	edox with 2.5Y	Hue		Give details of	f color change in Remarks.
Thick Dark Surfa	ace (A12)	· .		leyed without I ying Layer	Hue 5Y	or Redder		
Alaska Gleyed (A13)			j., see p.91 of 20				
Alaska Redox (A	1 14)		Supplen	nent; explain in R	Remarks)			
Alaska Gleyed F	Pores (A15)							
Restrictive Layer (if pr	resent)	<u> </u>	Drainage Class	S:				n de la companya de l La companya de la co
Type:	Vous	:	Soil Map Unit N	Name:		Hydric Soil F	Present?	Yes No <u></u>
Depth (inches)			-				***	4 4 4 4 4
Comments: 1. Sand frains 2.	water gurde	5					7.7	
3.						ſ	4.7	
YDROLOGY		× 5						A STATE OF THE STA
Wetland Hydrology I	ndicators (check on	es that apply, n	neasure from	soil surface):	3	Secondary Ind	icators (at leas	2 are required)
Primary Indicators (a	any one indicator is s	ufficient)				Water-Sta	ined Leaves (B	9)
Surface Water (A	1)	Surface S	oil Cracks (B6)	ſ	. =	Drainage	Patterns (B10)	
High Water Table	(A2) (w/in 12")	Inundation	Nisible on Ae	rial Imagery (B	37) _			iving Roots (C3) (within 12")
Saturation (A3) (w Water Marks (B1)	•		egetated Con	cave Surface ((B8) -	(pos. α,α	of Reduced Iro or soil color cl	
Vvaler Marks (B1) Sediment Deposit		Marl Depo	Sulfide Odor (C1) (w/in 12")	-	Salt Depo	รแร (Cอ) r Stressed Plan	to (D1)
Drift Deposits (B3			on Water Table		"\		nic Position (D2	
				(OZ) (W/III Z4	, -		quitard (D3))
Algal Mat or Crust	t (B4)	Other (exp	olain)		-		can perch H20) w/in 12")
Iron Deposits (B5)		**			_	Microtopo	graphic Relief (D4) (caused by water)
					_	X FAC Neut		
Field Observations (in	from ground surface	۵)،			T	(# ORL+F	ACVV dominants	> # FACU+UPL dominants)
Surface Water Presen	-	· .	Depth of water	(in)				
Water Table Present?		_	Depth to water				•	
ator Tubio Flogeriti								
Saturation Process		g in at that dept			١,	· Motland Usel-	alami Pasasas	2 V-2 N- X
Saturation Present?	Yes	<i>B</i> *	Depth to sat. (i		.	vveuana Hydr	ology Present	? Yes No
(includes capillary fring Describe Recorded Da			•	Unknown	octions)	if available:		
peacine Mecolded Da	ata (Stream yauye; II	ionitoring well, i	aeriai priotos, į	vieviona iliabei	cuons), I	ıı avallable.		
Remarks:	. h s l. 1		· · · · · · · · · · · · · · · · · · ·					
Nol	my to indicat	turn						



Site 70. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 70. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 70. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 70. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region Borough/City:__ Applicant/Owner: Sampling Point #: Investigator(s): Firm: HDR Alaska, Inc. Long. 157.78705 ± NAD 83 Recorded on GPS #: Marked on map? Field Map #: Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Flat Slope (%): ____ Aspect: ____ Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: _____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. HGM type: Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circumstances" present? Yes M No MSUMMARY OF FINDINGS Hydrophytic Vegetation Present? Nο is the sampled area Hydric Soil Present? Yes No 3 within a wetland? No Y Wetland Hydrology Present? Yes ____ 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") Cov.% Dom? Ind. Species Species Cov.% Dom? Ind. Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: 66/- (A/B) That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Abs.Cov.% Dom? Ind. OBL species FACW FACW species FAC species **FACU** species UPL + NL species Column Totals: 110 Total Sapling/Shrub Cover: 2,53 50% of total cover: 20% of total cover: Prevalence Index = B/A = Herb Stratum Abs.Cov.% Dom? Abs. Cov.% Dom? Ind. FAC 12. Hydrophytic Vegetation Indicators: FAQ 13. ✓ Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 21. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 22. Total Herb Cover: 20% of total cover: 5.850% of total cover: Hydrophytic Yes No Vegetation % of bare ground: Circular 1/10-ac plot \nearrow or other plot dimension: Present? % Cover of Wetland Bryophytes _______% Total Cover of Bryophytes _____ (where applicable) Remarks: Box ground Leaf litter 50%

SOIL						Sa	ampling Point #: <u>72</u>
Profile Description: (Describe to the depth needed to	document the ind	dicator or	confirm t	he abser	ce of indicato		<u></u>
Depth Horizon Soil Matrix	Redo	x Feature	es			α,α dip.	
	olor (moist)		Γγρе ¹	Loc ²	Texture	<u>(pos/</u>	Remarks
3-0 0	<u> </u>	<u> </u>	1150		10,000	<u>neg)</u>	(or use comment number)
						<u></u> .	
0-4 A 10823/1							2 (A 1(A)(A)(A)(A)(A)(A)(A)(A)(A)(A)(A)(A)(A)(A
4-16 B 258411 GO					Sil.	<u>100</u>	
				-	2 2	·	
17 0 0 1 1 1 D D 1 1 D D D 1				2.			
¹ Type: C = Concentration, D = Depletion, RM = Reduce							Root Channel, M = Matri
Hydric Soil Indicators (check ones that apply, measu		'					
Standard Indicators:	Indicators for I	Problema	atic Hydr	ic Soils	· _		La Lawrence of Mineral
Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16" organics, sat'd,	Alaska Co				one	primary indic	hydrophytic vegetation, ator of wetland appropriate landscape
underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12"of ground	Alaska Alı				or p	roblematic.	present unless disturbed
surface; @" in this pit	Alaska Re	edox with	2.5Y Hue	€	Giv	e details of co	olor change in Remarks.
Thick Dark Surface (A12)	Alaska Gio Underly	eyed with /ing Laye		5Y or Re	dder		
Alaska Gleyed (A13)	Other (e.g.						
Alaska Redox (A14)	Supplem	ent; explai	in in Rema	rks)			
Alaska Gleyed Pores (A15)							
Restrictive Layer (if present)	Drainage Class	• .					<i>D</i>
Type:	Soil Map Unit N	lame:		Hyd	ric Soil Prese	ent? Ye	esNo
Depth (inches)	sact.				* .		_
Comments: 1. fockets of organice unker up 15% 2.	of A.						
3.					i.		
HYDROLOGY							The state of the s
Wetland Hydrology Indicators (check ones that apply,	measure from s	soil surfa	ace):		ndary Indicato		are required)
Primary Indicators (any one indicator is sufficient)	Call Cyarles (DC)				Vater-Stained	fileski i 1770 i i	
	Soil Cracks (B6) on Visible on Aeri	ial Imaga	(D7)	-	rainage Patte	1 7	na Booto (C2) (within 40%)
T				ă	resence of Re		ng Roots (C3) (within 12") C4)
	Vegetated Cond	cave Surf	ace (B8)	-	(pos. α,α or s	oil color chan	
The state of the control of the state of the	oosits (B15)	24) (6-	40"\		Salt Deposits (*****	D4)
	n Sulfide Odor (C		•	7	Stunted or Stre	-	וטַ)
	son Water Table	(C2) (w/i	n 24")	1 .	Seomorphic Po Shallow Aquita		
Algal Mat or Crust (B4)	xpiain)			, K. E	w/in 24", can		
Iron Deposits (B5)				-1/	AC Neutral To	est (D5)) (caused by water) # FACU+UPL dominants)
Field Observations (in. from ground surface):					(# OBLTFACN	uviminality > 1	FIACOTOFE COMMINANTS)
Surface Water Present? Yes No X	Depth of water	(in.)					
Water Table Present? Yes No 🗸	Depth to water		·				
Seeping in at that de							
Saturation Present? Yes No	Depth to sat. (in			Wetla	and Hydrolog	y Present?	Yes No 🔀
(includes capillary fringe)		Jnknown			,	,	
Describe Recorded Data (stream gauge, monitoring wel	<u> </u>		nspection	s), if ava	ilable:	-,	
Demodration & St.							
Remarks: Motest 6 1011 but not	Somuel)						



Site 72. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.



Site 72. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 72. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 72. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region Anta NW Date: Borough/City: Applicant/Owner: Sampling Point #: 076 Investigator(s): Firm: HDR Alaska, Inc. AM9114 Lat. (dec.°)_167-127-53 Long. __157.79788 __ ±___' NAD 83 Recorded on GPS #: _____ Marked on map? ___ Field Map #: Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Flat Slope (%): Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PFO1/53 IP Photo nos./descriptions: 28/-284 Goil, Ves _____ Camera #: ____ Veg Type (Viereck Level 4 or other): ____ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circumstances" present? Yes M No _____ Are Vegetation $\underline{\mathcal{N}}$, Soil $\underline{\mathcal{N}}$, or Hydrology $\underline{\mathcal{N}}$ naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area Yes X Hydric Soil Present? Nο within a wetland? Wetland Hydrology Present? Remarks (e.g., marginal?): 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") Cov.% Dom? Ind. Species Species Cov.% Dom? Number of Dominant Species Ind. That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species 10 Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Abs.Cov.% Dom? Ind. OBL species FACW species FAC species FACU species UPL + NL species THC 12. Column Totals: Total Sapling/Shrub Cover: 50% of total cover: 20% of total cover: Herb Stratum Abs. Cov.% Abs.Cov.% Dom? Dom? Ind. **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) 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 5.5 20% of total cover: 50% of total cover: Hydrophytic Vegetation Circular 1/10-ac plot X or other plot dimension: _____ % of bare ground: Present? % Cover of Wetland Bryophytes ______ % Total Cover of Bryophytes ______ (where applicable) Remarks: (fanther Moss 90%

SOIL Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators) Depth Horizon Soil Matrix Redox Features 0.0 dip. Remarks 102 Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators) Profile Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Texture (102) Profile Color (moist) % Color (moist) % Type* Los* Color (moist) % Los* Color (moist) % Type* Los* Color (moist) % Los* Color (moist)								
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators) Color	SOIL							Sampling Point #: 76
Color (molst) Scilor (molst) Scilo	Profile Description: (Describe to	the depth neede	d to document the indic	cator or confirm	the abse	nce of indicato	rs)	
Secondary Indicators Convention Public Present Public Present	Depth Horizon <u>Soil</u>	Matrix	Redox	Features			a,a dip.	4
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Costed Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted):	(in.) (opt.) Color (mo	<u>%</u>	Color (moist)	<u>% Type¹</u>	<u>Loc²</u>	Texture		
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Histosol or Histel (A1) (=re*organic surface, sard unity wet period of growing season) Histose [A12] (A4) (within throma sz) Hydrogen Sulfide (A4) (within 12° of ground surface); and with chroma sz) Hydrogen Sulfide (A4) (within 12° of ground surface); and indicator Sulface (A12) Alaska Gleyed Without Hue 5' or Redder Underlying Layer Alaska	4-0 0:							
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC = Root Channel, M = Matrix Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators: Histosol or Histel (A1) (=re*organic surface, sard unity wet period of growing season) Histose [A12] (A4) (within throma sz) Hydrogen Sulfide (A4) (within 12° of ground surface); and with chroma sz) Hydrogen Sulfide (A4) (within 12° of ground surface); and indicator Sulface (A12) Alaska Gleyed Without Hue 5' or Redder Underlying Layer Alaska	0-11 <u>N3/1</u> 54/3/3	<u> </u>					Pos	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:	11+ Rematrost						************	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:	Type: C = Concentration, D = Dep		duced Matrix. CS=Coat	— ——— ted Sand Grain	s ² Locatio	on: PL = Pore I	Lining: RC	= Root Channel M = Matrix
Indicators for Problematic Hydric Soils*: Histosol of Histel (A1) (e16*organic surface, satd during wet period of growing season) Alaska Color Change* (TA4) New Jeropanic Soils*: Histosol of Histel (A2) (e-16* organics, satd, underlain by mineral soil with chroma sc2) Histosol prediction by mineral soil with chroma sc2) Histosol or Histosol (A2) (e-16* organics, satd, underlain by mineral soil with chroma sc2) Alaska Alpine Swales (TA5) Soil Organics (A15) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Soil Map Unit Name: Hydric Soil Present? Yes No_Depth (Inches) 9								TOOL SHOWING IN THAT IS
Histosol or Histel (A1) c 16 roganic surface, satid during well period of prowing season). → Histic Epipedon (A2) (8-16* organics, sard, underbin by mineral sol with orthorna 52) Hydroger Sulfide (A4) (within 12* organics, sard, underbin by mineral sol with orthorna 52) Hydroger Sulfide (A4) (within 12* organics, sard, underbin by mineral sol with orthorna 52) Hydroger Sulfide (A4) (within 12* organics, sard, underbin by mineral sol with orthorna 52) Hydroger Sulfide (A4) (within 12* organics, sard, underlying Layer Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A15) Restrictive Layer (if present) Type:		72.* * * * * * * * * * * * * * * * * * *				_		
Hydrogos Nuffice (A) (within 12°) Alaska Redox (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Parmach						³On		
Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Depth (inches) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Drainage Class: Depth (inches) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Alaska Redox (A14) Drainage Class: Depth (inches) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Present? Yes No Depth to water (in.) Alaska Redox with 2.5Y Hue Give details of color change in Remarks. Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Alaska Redox (A14) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Present? Yes No Depth of water (in.) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g. see p.91 of 2007 Supplement, explain in Remarks) Hydric Soil Present? Yes No Depth of water (in.) Alaska Redox (A14) Alaska Gleyed vertical in Remarks Alaska Gleyed vertical in Remarks Alaska Redox (A14) Alaska Gleyed vertical in Remarks Alaska Redox (Mater See p.91 of 2007 Supplement, explain in Remarks Hydric Soil Present? Yes No Depth of water (in.) Alaska Redox (A14) Water-Stained Leaves (B9) Drainage Class: Water-S	underlain by mineral soil with	Alaska Alpii	ne Swales (TA	5)	posi	tion must b		
Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed (A15) Potential Cleyed Pores (A15) Drainage Class: PD Soil Map Unit Name: Depth (inches) 7			Alaska Red	ox with 2.5Y H	ue			color change in Remarks.
Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A14) Pestrictive Layer (if present) Type:	***				e 5Y or Re	edder		
Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type:			Other (e.g., s	see p.91 of 2007				
Drainage Class: Drainage C			Supplemen	nt; explain in Rem	arks)			
Type: formation Figure Factor Fac								
Comments: 1. 2. 3. HYDROLOGY Wettand Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Segiment Deposits (B1) Algal Mat or Crust (B4) Iron Deposits (B5) Iron Deposits (B5) Surface Water (A1) Surface Soil Cracks (B6) Drainage Patterns (B10) Oxid'd Rhizospheres on Living Roots (C3) (within 12") Presence of Reduced Iron (C4) (Dos. 0., or osil color change w/in 12") Satt Deposits (C5) Sat	Type: parmatros	<u> </u>		me:	Hyd	iric Soil Prese	ent?	Yes No
1. 2. 3. 3. 4YDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Segiment Deposits (B1) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water (A1) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Drainage Patterns (B10) Oxid d Rhizospheres on Living Roots (C3) (within 12") Presence of Reduced Iron (C4) (pos. q. q. or soil color change w/in 12") Salt Deposits (C5) Sutnated or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Field Observations (in. from ground surface): Surface Water Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled? Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No Depth to sat. (in.)		·			J			
### Wetland Hydrology Indicators (check ones that apply, measure from soil surface): ### Primary Indicators (any one indicator is sufficient) ### Surface Water (A1)	- T T T T T T T T T T T T T T T T T T T		94.4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Secondary Indicators (at least 2 are required) Primary Indicators (any one indicator is sufficient) Water-Stained Leaves (B9) Surface Water (A1) Surface Soil Cracks (B6) Whigh Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7) Yes Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Marl Deposits (B15) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Algal Mat or Crust (B4) Other (explain) Field Observations (in. from ground surface): Surface Water Present? Yes No Depth for water (in.) Water Table Present? Yes No Depth to water (in.) Water Table Present? Yes No Depth to sat. (in.) Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (includes capillary fringe) Epi Endo Unknown	3. ·							ar y
Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Secondary Indicators (at least 2 are required) Primary Indicators (any one indicator is sufficient) Water-Stained Leaves (B9) Surface Water (A1) Surface Soil Cracks (B6) Whigh Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7) Yes Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Marl Deposits (B15) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Drift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Algal Mat or Crust (B4) Other (explain) Field Observations (in. from ground surface): Surface Water Present? Yes No Depth for water (in.) Water Table Present? Yes No Depth to water (in.) Water Table Present? Yes No Depth to sat. (in.) Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (includes capillary fringe) Epi Endo Unknown	HYDROLOGY					448	V-	*
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Marl Deposits (B15) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in 12") Sprift Deposits (B3) Dry-Season Water Table (C2) (w/in 24") Algal Mat or Crust (B4) Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (includes capillary fringe) Water-Stained Leaves (B9) Drainage Patterns (B10) Oxid'd Rhizospheres on Living Roots (C3) (within 12") Oxid'd Rhizospheres on Living Roots (C3) (within 12") Presence of Reduced Iron (C4) (pos. o.a or soil color change w/in 12") Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") Microtopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Wetland Hydrology Present? Yes No (includes capillary fringe) Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes		neck ones that ap	ply, measure from so	il surface):	Seco	<u> </u>	rs (at least	2 are required)
∠ High Water Table (A2) (w/in 12") Inundation Visible on Aerial Imagery (B7) Oxid'd Rhizospheres on Living Roots (C3) (within 12") ∠ Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Presence of Reduced Iron (C4) (pos. α.α or soil color change w/in 12") ∠ Water Marks (B1) Marl Deposits (B15) Salt Deposits (C5) _ Sediment Deposits (B3) Hydrogen Sulfide Odor (C1) (w/in 12") Stunted or Stressed Plants (D1) _ Dry-Season Water Table (C2) (w/in 24") Geomorphic Position (D2) _ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") Microtopographic Relief (D4) (caused by water) _ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Field Observations (in. from ground surface): No Depth to water (in.)	Primary Indicators (any one indicators	ator is sufficient)			را	Nater-Stained	Leaves (B9	
X Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) (pos. α,α or soil color change w/in 12") Salt Deposits (B15) Salt Deposits (C5) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12") MIcrotopographic Relief (D4) (caused by water) FAC Neutral Test (D5) (# OBL+FACW dominants) Field Observations (in. from ground surface): Saturation Present? Yes No Depth to water (in.) FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants) Water Table Present? Yes No Depth to water (in.) Water Table Present? Yes No Depth to sat. (in.) Yes No Depth Table Present? Yes No Depth T			and the second s	I Imagery (B7)				ving Poots (C3) (within 40%)
				/	\			- , , ,
Sediment Deposits (B2) Hydrogen 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) Algal Mat or Crust (B4) Other (explain) Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")				ve ourrace (Bo	•			ange w/in 12")
Drift Deposits (B3)) (w/in 12")				s (D1)
(w/in 24", can perch H2O w/in 12") Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Water Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (w/in 12") Wetland Hydrology Present? Yes No (w/in 12") MIcrotopographic Relief (D4) (caused by water) (# OBL+FACW dominants > # FACU+UPL dominants) Water Table Present? Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (includes capillary fringe)	Drift Deposits (B3)							
Iron Deposits (B5)	Algal Mat or Crust (B4)	Othe	r (explain)			Shallow Aquita	rd (D3)	w/in 12")
Field Observations (in. from ground surface): Surface Water Present? Yes No Depth of water (in.) Water Table Present? Yes No Depth to water (in.) Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) (includes capillary fringe) Epi Endo Unknown Wetland Hydrology Present? Yes No	Iron Deposits (B5)	e grafië George			r	Microtopograph FAC Neutral Te	nic Relief (D est (D5)	04) (caused by water)
Water Table Present? Yes No Depth to water (in.) 17 Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Wetland Hydrology Present? Yes No Depth to Sat. (in.) No Saturation Present? Wetland Hydrology Present? Yes No Depth to Sat. (in.) No Saturation Present?	, -	surface):						
Seeping in at that depth but not yet filled?: Saturation Present? Yes No Depth to sat. (in.) \sqrt{g} (includes capillary fringe) Epi Endo Unknown Wetland Hydrology Present? Yes No	-							
Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present? Yes No (includes capillary fringe) Epi Endo Unknown								
(includes capillary fringe) Epi Endo Unknown		_						
	-	No			Wetla	and Hydrology	Present?	Yes No
		auge, monitorina			ns) if ava	ilable:		

Remarks: Seophy it at 10%.



Site 76. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 76. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 76. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 76. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project:	78 #: AMB
Investigator(s):	#:_AMB
Lat. (dec.°) (07.1280) Long. 157.4035) ± NAD 83 Recorded on GPS #: X Marked on map? X Field Map Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Slope (%): 17 Aspective Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear convex / concave NWI classification: Up Photo nos./descriptions: 257-290 Soil UPS Camera #: Veg Type (Viereck Level 4 or other):	#: <u>AMB</u>
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform:Slope (%): 1-7 Aspet Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear convex / concave NWI classification:Photo nos./descriptions:	#: 111°11/
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification:	
Photo nos./descriptions: 387-290 Soil, veg Camera #: Veg Type (Viereck Level 4 or other):	ct: Soul
Carriera # veg Type (viereck Level 4 or other):	nen/
Are climatic / hydrologic conditions on the site typical for this time of year? Yes. No. If no evoluin	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No: If no, explain. HGM type Are Vegetation // , Soil // , Soil // , or Hydrology // significantly disturbed? Are "Normal Circumstances" present? Yes // No	• <u></u>
Are Vegetation	
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes X No No	
Hydric Soil Present? Yes No Is the sampled area within a wetland? Yes No	
Wetland Hydrology Present? Yes No Remarks (e.g., marginal?):	tite a tij e List Make i e
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.	
Dominance Test worksheet: A Secretary Secretar	
Tree Stratum (dbh≥ 3") Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. Number of Dominant Species	
1. Yell From 3 FACU 5. That are OBL, FACW, or FAC:	(A)
2. Prz glan 15 X FACU 6 Total Number of Dominant	
3 Species Across All Strata:	(B)
Total Tree Cover: 18 Percent of Dominant Species	1
That are OBL, FACW, or FAC:	(A/B)
50% of total cover: 20% of total cover: Prevalence Index worksheet:	gesti i
Sapling/Shrub Stratum (woody plants < 3" dbh) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. Total % Cover of: Multiply	<u>by:</u>
1 Pag Lees 6 FACUT For pily 10 FAC OBL species X1=	
2. Vary 1 20 X FAC 8 103 45 2 FACW Species 35 X2= 76	
3. Vaccivit 15 X FAC 9. Betnom 3 FAC FAC species 62 X3= 29	
4. <u>Led dec</u> <u>35</u> <u>X</u> <u>FACW 10.</u> FACU species <u>26</u> X4= 10.	7
5. W 444 10 FAC 11. UPL + NL species X5= —	
— Column Totals: 163 (A) 76	<u>(</u> B)
Total Sapling/Shrub Cover: 101	1.
50% of total cover: 50.5 20% of total cover: 20.2 Prevalence Index = B/A = 3.75	
Herb Stratum Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Car by 3 x FAC 12	
2. Col can Hydrophytic Vegetation Indicators:	
3	·
4Prevalence Index is ≤3.0	
5 Morphological Adaptations ¹ (Provide supplied to the	
6 data in Remarks or on a separate she	1
8 Problematic Hydrophytic Vegetation ¹ (E:	(plain)
9 20 20	
10 21 1Indicators of hydric soil and wetland hydrology	/ must
be present unless disturbed or problematic.	
Total Herb Cover: 4	
20% of total cover	
Circular 1/10-ac plot of other plot dimension: % or bare ground: Present?	-
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks: Litten 15%	

SOIL					,	Sampling Point #:
Profile Description:	: (Describe to the depth ne	eded to document the indicator	or confirm the abs	ence of indicato	rs)	
Depth Horizon	Soil Matrix	Redox Feat	ures		α,α dip.	
(in.) (opt.)	Color (moist) %	Color (moist) %	Type ¹ Loc ²	Texture	(pos/	Remarks
3-0 0	and Carrier Sparks & Comme	Ri ya 6wa in ini ini ini ini			neg)	(or use comment number)
0-L A	1048414	Alexander Alexander	A transfer of the second	511	Nea	the control of the second
13	TOYKHE			4		147 July 1
No. 10 10 10 10 10 10 10 10 10 10 10 10 10	-512-	A STATE OF THE STA			4.	1.0
1-7 R	10H412 10		a sun As un	Sal	nee	
	5HR314 20		* * * * * * * * * * * * * * * * * * * *		// / /	
7-16 BIL	7,5483/4	Manageria .	- 1 	Sand	nea	
15-20 °C	104R 3/4			Sond	nea	
¹ Type: C = Concent	ration. D = Depletion. RM =	Reduced Matrix, CS=Coated S	and Grains ² Local	ion: PL = Pore	Linina. RC :	= Root Channel M = Matrix
	The state of the s	measure from top of mineral				, many
Standard Indicators		Indicators for Proble	T 2: 2* : 3*:		•	
A/	 el (A1) (≥16″organic surface,	송점 - 그리고 이렇게 하시고 하나요.	AL SE	Y 7	e indicator o	of hydrophytic vegetation,
	vet period of growing season)	Alaska Color Cha	ange* (TA4)			icator of wetland
	1 (A2) (8-16" organics, sat'd,	Alaska Alpine Sv	vales (TA5)			an appropriate landscape e present unless disturbed
	mineral soil with chroma ≤2) de (A4) (within 12"of ground		in in in sew		roblematic.	e present uniess disturbed
		Alaska Redox wi	th 2.5Y Hue	⁴Giv	e details of	color change in Remarks.
Thick Dark Surf	face (A12)	Alaska Gleyed w Underlying Lay	ithout Hue 5Y or I ver	Redder		
Alaska Gleyed	(A13)	Other (e.g., see p.	The first section of the control of			
Alaska Redox (Supplement; exp				
Alaska Gleyed	Pores (A15)	vin sell				
Restrictive Layer (if p	resent)	Drainage Class: L	V			
Туре:	\$1.1 PM	Soil Map Unit Name:	H	ydric Soil Prese	ent?	Yes No <u>/</u>
Depth (inches) _		tule line in the first of				
Comments: 1. Well drained 2. 3.). Bown sand,	esen en e				
HYDROLOGY	rage . A					
Wetland Hydrology	Indicators (check ones tha	t apply, measure from soil sui	rface): <u>Sec</u>	condary Indicato	rs (at least	2 are required)
Primary Indicators (any one indicator is sufficie		<u> </u>	_Water-Stained	Leaves (B9)
		Surface Soil Cracks (B6)	1	Drainage Patte	rns (B10) _	
High Water Table	e (A2) (w/in 12")1	nundation Visible on Aerial Imag	дегу (В7)			ving Roots (C3) (within 12")
Saturation (A3) (w/in 12") 5	Sparsely Vegetated Concave Su	ırface (B8) 🗼	Presence of Re pos. a,a or s		
Water Marks (B1) <u> </u>	Marl Deposits (B15)		Salt Deposits (
Sediment Depos	its (B2)	lydrogen Sulfide Odor (C1) (w/i	n 12")	Stunted or Stre	ssed Plants	s (D1)
Drift Deposits (B	3)- <u>√</u> [Dry-Season Water Table (C2) (v	v/in 24")	Geomorphic Po	osition (D2)	
Algal Mat or Crus	st (B4)	Other (explain)		Shallow Aquita		
Iron Deposits (B5			J.	(w/in 24", can		
Tion Deposits (Bo	"		Ť	FAC Neutral To	·	(caused by water)
						# FACU+UPL dominants)
·	n. from ground surface):					
Surface Water Preser			1			
Water Table Present?		1	į			
	Seeping in at	that depth but not yet filled?: _				.
Saturation Present?	Yes No _	Depth to sat. (in.)	W e	tland Hydrolog	y Present?	Yes No X
(includes capillary frin		Epi Endo Unknow				
Describe Recorded D	ata (stream gauge, monitor	ing well, aerial photos, previous	inspections), if a	vailable:		
Remarks: 1 41	:					
Remarks: Willsow						



Site 78. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 78. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 78. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 9, 2012.



Site 78. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 9, 2012.

WEILAND DETERMINATION DATA FORM -	- Alaska Region
Project: Ambler Airport Borough/City: Arch	Nathart Date: 9/10/17
Applicant/Owner:	Sampling Point #: 9Z
	HDR Alaska, Inc.
Lat. (dec.°) 67.10508 Long. 157.84999 ± NAD 83 Recorded of	on GPS #: D Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear convex / concave Shape up/downslope: linear / convex / concave	convex / concave NWI classification: Uplus
Photo nos./descriptions: 317-320 Sci Jeg Camera #:	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	If no, explain. HGM type:
Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circu	umstances" present? Yes 📈 No
Are Vegetation, Soil, or Hydrology naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Open poption	white spruce torest
Hydrophytic Vegetation Present? Yes No Is the sampled are	ordali ordali vita ordali i 9a vija gradenjiga savlasta sij
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). % cal	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. le sla 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2. for than 20 X FACU 6.	Total Number of Dominant
3. Fir mar 5 FACU 7.	Species Across All Strata:
Total Tree Cover: 3 6	Percent of Dominant Species
15	That are OBL, FACW, or FAC: 66 /. (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. Led dec 60 X FACW 7. Sol glan 5 FAC	OBL species X1=
2. Vance uli 20 x FAC 8. Bothan 5 FAC	FACW species $\frac{74}{4}$ $x_2 = \frac{148}{40}$
3. Vacc vit 15 FAC 9. Sol rich 5 FACW	FAC species
5. Pr gla 5 FACU 11.	FACU species
6. Pon tram 3 _ TACU12.	UPL + NL species X5=
Total Sapling/Shrub Cover: 139	Column Totals: <u>169</u> (A) <u>467</u> (B)
Shrub 50% of total cover: 69.5 20% of total cover: 27.8	Prevalence Index = B/A = 2.76
Herb Stratum	Trevalence mass – Biy –
Abs.Cov.% Dom? Ind. 1. For any FACU12.	The state of the s
2. Cal can 1 FAC 13.	Hydrophytic Vegetation Indicators:
3	Dominance Test is>50%
4 15	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
6	data in Remarks or on a separate sheet)
7 18 19	Problematic Hydrophytic Vegetation ¹ (Explain)
8	Prince of the Control
1021	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb-Gover:	
50% of total cover 20% of total cover	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground: 5	Vegetation Yes No No No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes/5% (where applicable)	Tresciti
	ratura < 5%, combined w/ shrub
Donnel from Comment 202	Stratum

SOIL				-		Sampling Point #: <u>9Z</u>
Profile Description: (Desc	cribe to the depth ne	eeded to document the i	indicator or confirm	the absence of in	dicators)	
Depth Horizon	Soil Matrix	Re	dox Features		a,a dip.	
• . :	or (moist) %	Color (moist)	<u>% Type</u> 1	Loc² Textu	(nos/	Remarks (or use comment number)
3-0 0:		<u> </u>				
0-8 BI 54	1/1 65	i <u>naramski narije narij</u> 145	<u> </u>		<u></u>	. The second sec
	VR4/6 40	400 (100)			meg	
8-17 BZ WY	R4/1	· C. C.	· · · · · · · · · · · · · · · · · · ·	31	- nee	4
1						
¹ Type: C = Concentration, [·	= Root Channel, M = Matrix
Hydric Soil Indicators (ch	eck ones that apply	, measure from top of	mineral layers un	less otherwise n	oted):	
Standard Indicators:			r Problematic Hyd	iric Soils³:		. tin vivago en gradado.
M Histosol or Histel (A1) sat'd during wet perio Histic Epipedon (A2) underlain by mineral s Hydrogen Sulfide (A4) surface; @ " ii	d of growing season) (8-16" organics, sat'd, soil with chroma ≤2) (within 12"of ground	Alaska	Color Change⁴ (TA Alpine Swales (TA5 Redox with 2.5Y Hı	- 1966 - Mille Barrell, 1966 - 1966 5) - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 -	one primary in hydrology, and position must t or problematic	of hydrophytic vegetation, dicator of wetland an appropriate landscape be present unless disturbed f color change in Remarks.
Thick Dark Surface (A	12)		Gleyed without Hue	5Y or Redder		
Alaska Gleyed (A13)			e.g., see p.91 of 2007			
Alaska Redox (A14)		Supple	ement; explain in Rem	arks)		•
Alaska Gleyed Pores (A15)					
Restrictive Layer (if present)		Drainage Cla	ss: M			.74
Type: Depth (inches)		Soil Map Unit	Name:	Hydric Soil	Present?	YesNo
Comments: 1. (xet) draited 2. 3.						
HYDROLOGY						2848 11 3
Wetland Hydrology Indicat	ors (check ones th	at apply, measure fron	n soil surface):	Secondary in	dicators (at least	2 are required)
Primary Indicators (any on				-	ained Leaves (B	
✓ Surface Water (A1)	M	Surface Soil Cracks (Bo	3)	Drainage	Patterns (B10) _	: '
High Water Table (A2) (w/in 12")	Inundation Visible on A	erial Imagery (B7)			iving Roots (C3) (within 12")
Saturation (A3) (w/in 12	") —	Sparsely Vegetated Co		Presence (pos. α,	e of Reduced Iror a or soil color ch	n (C4)
Water Marks (B1)		Marl Deposits (B15)	(04) (- // - 40%)		osits (C5)	
Sediment Deposits (B2)	3	Hydrogen Sulfide Odor			or Stressed Plant	The state of the s
Drift Deposits (B3) Algal Mat or Crust (B4)		Dry-Season Water Tab Other (explain)	le (C2) (w/in 24")	Shallow	ohic Position (D2) Aquitard (D3)	
Iron Deposits (B5)				Microtop FAC Neu	ıtral Test (D5)	W/In 12") D4) (caused by water) > #FACU+UPL dominants)
Field Observations (in. from	ground surface):					, , , , , , , , , , , , , , , , , , ,
Surface Water Present?	Yes No	Depth of water	er (in.)			
Water Table Present?	Yes No	Marie Control	er (in.)			
		at that depth but not yet				
Saturation Present?		Depth to sat.		Wetland Hyd	irology Present	? Yes No
(includes capillary fringe)	48	Epi Endo	Unknown	4		
Describe Recorded Data (str	eam gauge, monito	ning well, aerial photos,	, previous inspectio	ms), ir available:		
Remarks:				<u>.</u>		
•						



Site 92. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 92. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 92. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 92. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

Project: Ambler Airport Borough/City: Arche	NW Date: 9/10/12
Applicant/Owner:	Sampling Point #: 93
Investigator(s): Mac 5. Jan J Firm: H	IDR Alaska, Inc. AMBI 47
Lat. (dec.°) 67-10575 Long. 157.84982 ± NAD 83 Recorded or	n GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfor	•
Local relief: Shape across slope linear / convex / concave Shape up/downslope: linear/ convex / concave	onvex / concave NWI classification:Uplud
Photo nos./descriptions:Camera #:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation $\frac{\mathcal{N}}{\mathcal{N}}$, Soil $\frac{\mathcal{N}}{\mathcal{N}}$, or Hydrology $\frac{\mathcal{N}}{\mathcal{N}}$ significantly disturbed? Are "Normal Circu	mstances" present? Yes 💢 No
Are Vegetation , Soil , or Hydrology naturally problematic? If needed, explain a	answers here.
SUMMARY OF FINDINGS Willow thinket	
Hydrophytic Vegetation Present? Yes No Is the sampled are	Na saga na manana na mg
Hydric Soil Present? Yes No within a wetland?	Yes No
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % car	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1 5 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2 6	Total Number of Dominant
3 7	Species Across All Strata:(B)
4 8	Percent of Dominant Species
Total Tree Cover:	That are OBL, FACW, or FAC: 106/. (A/B)
50% of total cover: 20% of total cover:	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of:Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 7 X1= 7
1. Lin box 2 UPL 7. Piz glan 2 FACU	FACW species 80 X2= 760
2. Pace whi 10 FAC 8. 3. Pos ace 6 FACU 9.	FAC species 30 X3= 90
4. Bot nan 15 FAC 10.	FACU species 8 X4= 3 2
5. Cr Cay 11.	UPL + NL species 2 X5= 10
6.50 rich 80 × FACW12.	Column Totals: 127 (A) 299 (B)
Total Sapling/Shrub Cover: 115	Column rotals. (A)
50% of total cover:	Prevalence Index = B/A = 2.35
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Ervano 7 OBL 12. 2. Egy arv 15 + FAC 13.	Hydrophytic Vegetation Indicators:
3. Col can 5 FAC 14.	Dominance Test is>50%
415	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7 18 10	Problematic Hydrophytic Vegetation ¹ (Explain)
8	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 27	
50% of total cover: 13.5 20% of total cover: 5.4	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	Present?
Remarks:	
·	

sat'd during wet period of growing season) Histic 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 Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed (A14) Alaska Gleyed (A15) Restrictive Layer (if present) Type: Depth (inches) Comments: 1. 672 is some feeking but much driver and struckly 2. 3. YDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Alaska Gleyed (A13) Alaska Gleyed (A14) Drainage Class: Soil Map Unit Name: Hydric Soil Present? Hydric Soil Present? Secondary Indicators (at least Primary Indicators (any one indicator is sufficient) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Hydric Soil Present? Hydric Soil Present? Water-Stained Leaves (B Drainage Patterns (B10) Oxid'd Rhizospheres on I Presence of Reduced Iro (pos. a., or or soil color of Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Shallow Aquitard (C3) (win 24", can perch H2C Microtopographic Relief (FAC) Winniants ### Control of the primary in this problematic or problematic	Sampling Point #: 93 Remarks (or use comment numbe
(in.) (opt.) Color (moist) % Color (moist) % Type' Loc' Texture (post) need) 5-0 0; 7	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains *Location: PL = Pore Lining, RC Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains **Location: PL = Pore Lining, RC Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): **Standard Indicators: Histosco or Histel (A1) (c:16*organic surface, sat'd during wet period of growing season)	
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains ²Location: PL = Pore Lining, RC Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Histosol or Histel (A1) (2·16°organic surface, sa'd during wet period of growing season) Hydrosol surfaces (TA5) (3·10 the position must or problematic one primary of position must or problematic or problematic or problematic or problematic surface; we for the position must or problematic surface; we for example or problematic surface, say of the position must or problematic surface (Give details of Underlying Layer (Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Alaska Redox (A14) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	· Bright State
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:	
Hydric Soil Indicators (check ones that apply, measure from top of mineral layers unless otherwise noted): Standard Indicators:	
Standard Indicators: Histosol or Histel (A1)	= Root Channel, M = Mat
Histosol or Histel (A1) (216° organic surface, sat'd during wet period of growing season) Histos Epipedon (A2) (8-16° organics, sat'd, underlain by mineral soil with chroma s2) Histos Epipedon (A2) (8-16° organics, sat'd, underlain by mineral soil with chroma s2) Hydrogen Sulfide (A4) (within 12° of ground surface; @ 'in this pit Thick Dark Surface (A12) Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement, explain in Remarks) Drainage Class: Soil Map Unit Name: Hydric Soil Present? Depth (inches) Comments: 1. 672 is seme texture but much driver and security 3. PYDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Saturation (A3) (w/in 12") Water Marks (B1) Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Winder (Explain) Alaska Color Change ⁴ (TA4) Alaska Color Change ⁴ (TA4) Alaska Alpine Swales (TA5) Halaska Alpine Swales (TA5) Halaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Pedox without Hue 5Y or Redder Underlying Lavers Alaska Pedox without	100000000000000000000000000000000000000
sat'd during wet period of growing season) Histic 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 Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Drainage Class: Type: Depth (inches) Comments: 1. 672 is seme feature but much drive and strandly Primary Indicators (any one indicator is sufficient) Most Primary Indicators (any one indicator is sufficient) Mater Marks (B1) Marl Deposits (B15) Algal Mat or Crust (B4) Vother (explain) Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Drainage Class: Hydric Soil Present? Hydric Soil Present? Becondary Indicators (at least for which drive and strandly supplement; explain in Remarks) Secondary Indicators (at least for which drive and strandly supplement; explain in Remarks) Secondary Indicators (at least for which drive and strandly supplement; explain in Remarks) Water-Stained Leaves (B for primary Indicators (at least for prosing patterns (B10) Oxid'd Rhizospheres on I presence of Reduced from (pos. a.ç or soil color of Salt Deposits (C5) Salt Deposits (C5) Stunted or Stressed Plan (Diff Deposits (B3) Other (explain) Microtopographic Relief (FA)	n Marian de la companya de la compa
Histic Epipedon (A2) (8-16' organics, satd, underlain by mineral soil with chroma \$2') Histic Epipedon (A2) (8-16' organics, satd, underlain by mineral soil with chroma \$2') Hydrogen Sulfide (A4) (within 12' of ground surface; @ in this pit Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Primary Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Mater Marks (B1) Squared Water (A1) Water Marks (B1) Squared Water (A2) Water Marks (B3) Alaska Alpine Swales (TA5) Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Gleyed without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Prainage Class: Soil Map Unit Name: Drainage Class: Hydric Soil Present? Becondary Indicators (at least for word with the supply of the presence of Reduced Iron (pos. q.a or soil color of Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Shallow Aquitard (D3) (win 24", can perch H2C (Win 24") Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Redox with 2.5Y Hue Alaska Alpine Swales (TA5) Alaska Redox with 2.5Y Hue Alaska Alpine Swales (TA5) Alaska Cleyat without Hue 5Y or Redder Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Hydric Soil Present? Becondary Indicators (at least M Water-Stained Leaves (B M Water-Stained Le	of hydrophytic vegetation
Hydrogen Sulfide (A4) (within 12'of ground surface; @ "in this pit	licator of wetland an appropriate landscap
Alaska Redox with 2.5Y Hue *Give details of Underlying Layer Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed Pores (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Depth (inches) Comments: 1. \$\int 2 \int 5 \int	e present unless disturbe
Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Redox (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Comments: 1. 672 is same texture but much driver and assure from soil surface): Primary Indicators (any one indicator is sufficient) A Surface Water (A1) A Surface Water (A1) A Surface Soil Cracks (B6) High Water Table (A2) (wiin 12") Saturation (A3) (wiin 12") Water Marks (B1) Sediment Deposits (B2) Algal Mat or Crust (B4) Vinn Deposits (B5) Underlying Layer Other (e.g., see p.91 of 2007 Supplement; explain in Remarks) Hydric Soil Present? Hydric Soil Present? Hydric Soil Present? Water Soil Cracks (B6) Drainage Patterns (B10) Oxid'd Rhizospheres on I Presence of Reduced Iro (pos. a.g. or soil color of Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Shallow Aquitard (D3) (w/in 24", can perch H2C MIcrotopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants	color change in Remarks
Alaska Redox (A14) Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Comments: 1. 67 is same texture but much driver and assure from soil surface): Primary Indicators (any one indicator is sufficient) A Surface Water (A1) High Water Table (A2) (Win 12") Saturation (A3) (Win 12") Water Marks (B1) Drainage Class: Soil Map Unit Name: Hydric Soil Present? Hydric Soil Present? Hydric Soil Present? Water-Stailed Leaves (B Secondary Indicators (at least Water-Stained Leaves (B Secondary Indicators (at least M Water-Stained Leaves (B Secondary Indicators (B Secondary	
Alaska Gleyed Pores (A15) Restrictive Layer (if present) Type: Depth (inches) Comments: 1. \$7 is same feature but much driver and strandly 2. 3. HYDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) Al Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Saturation (A3) (w/in 12") Saturation (A3) (w/in 12") Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Marl Deposits (B15) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Vother (explain) Drainage Class: Soil Map Unit Name: Hydric Soil Present? Hydric Soil Present? Water Soil Present? Secondary Indicators (at least Water-Stained Leaves (B) Drainage Patterns (B10) Oxid'd Rhizospheres on Incomplete (B8) Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Salt Deposits (C5) Shallow Aquitard (D3) (w/in 24", can perch H2C Microtopographic Position (D2 FAC Neutral Test (D5) (# OBL+FACW dominants)	
Drainage Class: Type: Soil Map Unit Name: Hydric Soil Present?	
Type: Soil Map Unit Name: Hydric Soil Present? Comments: 1. \$\instrum_{\instru	
Depth (inches)	
Comments: 1. B2 is same texture but much driver and arrankly 2. 3. IYDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) A/ Surface Water (A1) High Water Table (A2) (Win 12") Saturation (A3) (Win 12") Water Marks (B1) Water Marks (B1) Marl Deposits (B15) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Vother (explain) Drift (Deposits (B5) Iron Deposits (B5) Wetland Hydrology Indicators (at least Marks (B6) Drainage Patterns (B10) Oxid'd Rhizospheres on Leaves (B8) Presence of Reduced Iron (pos. a.a or soil color of Salt Deposits (C5) Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (Win 24", can perch H2C Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	Yes No
1. \$\(\begin{align*}	
2. 3. HYDROLOGY Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Primary Indicators (any one indicator is sufficient) A/ 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) Formulation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Sediment Deposits (B2) Dry-Season Water Table (C2) (w/in 12") Algal Mat or Crust (B4) Formulation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Marks (B1) Sediment Deposits (B2) Dry-Season Water Table (C2) (w/in 12") Shallow Aquitard (D3) (w/in 24", can perch H2C) Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	
Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Secondary Indicators (at least M water Stained Leaves (at least M water Staine	
Wetland Hydrology Indicators (check ones that apply, measure from soil surface): Secondary Indicators (at least Molecular Indicators (at least Molecular Indicators) Primary Indicators (any one indicator is sufficient) ✓ Surface Soil Cracks (B6) ✓ Water-Stained Leaves (B ✓ Jump Water Table (A2) (w/in 12") ✓ Inundation Visible on Aerial Imagery (B7) ✓ Oxid'd Rhizospheres on Label Presence of Reduced Iro (pos. α,α or soil color of Salt Deposits (B15) ✓ Water Marks (B1) ✓ Marl Deposits (B15) ✓ Salt Deposits (C5) ✓ Sediment Deposits (B3) ✓ Dry-Season Water Table (C2) (w/in 24") ✓ Stunted or Stressed Plant (D2) ✓ Algal Mat or Crust (B4) ✓ Other (explain) ✓ Shallow Aquitard (D3) (w/in 24", can perch H2C) ✓ Iron Deposits (B5) ✓ Microtopographic Relief (Molecular Test (D5) (# OBL+FACW dominants)	
Primary Indicators (any one indicator is sufficient) A/ 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) Fresence of Reduced Iro (pos. α,α or soil color of Salt Deposits (B2) Algal Mat or Crust (B4) Fresence of Reduced Iro (pos. α,α or soil color of Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24") Other (explain) Water-Stained Leaves (B Drainage Patterns (B10) Oxid'd Rhizospheres on L Presence of Reduced Iro (pos. α,α or soil color of Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C) Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	75 FIZ 1916
A Surface Water (A1) High Water Table (A2) (w/in 12") Saturation (A3) (w/in 12") Water Marks (B1) Drainage Patterns (B10) Sparsely Vegetated Concave Surface (B8) Water Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Value Marks (B5) Algal Mat or Crust (B4) Value Marks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) (w/in 12") Dry-Season Water Table (C2) (w/in 24") Value Marks (B1) Drainage Patterns (B10) Oxid'd Rhizospheres on L Presence of Reduced Iro (pos. α,α or soil color of Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	2 are required)
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) Value (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) (w/in 12") Dry-Season Water Table (C2) (w/in 24") Other (explain) Oxid'd Rhizospheres on I Presence of Reduced Iron (pos. α,α or soil color of Salt Deposits (C5) Salt Deposits (C5) Stunted or Stressed Plant (C2) (w/in 24") Shallow Aquitard (D3) (w/in 24", can perch H2C) Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)))
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Value Marks (B4) In Deposits (B5) Sparsely Vegetated Concave Surface (B8) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) (w/in 12") Dry-Season Water Table (C2) (w/in 24") Other (explain) Presence of Reduced Iron (pos. α, α or soil color of Salt Deposits (C5) Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C) Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Value Marks (B1) Drift Deposits (B3) Algal Mat or Crust (B4) Value Marks (B1) Dry-Season Water Table (C2) (w/in 24") Other (explain) (pos. α,α or soil color of Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C) Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants)	
Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) ✓ Iron Deposits (B5) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) (w/in 12") Dry-Season Water Table (C2) (w/in 24") ✓ Other (explain) ✓ Other (explain) Marl Deposits (B15) Salt Deposits (C5) Stunted or Stressed Plant Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C ✓ Microtopographic Relief (✓ FAC Neutral Test (D5) (# OBL+FACW dominants	
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Dry-Season Water Table (C2) (w/in 24") Other (explain) Other (explain) Geomorphic Position (D2 Shallow Aquitard (D3) (w/in 24", can perch H2C Microtopographic Relief (FAC Neutral Test (D5) (# OBL+FACW dominants	
Algal Mat or Crust (B4) Very Iron Deposits (B5) Other (explain) Shallow Aquitard (D3) (w/in 24", can perch H2C MIcrotopographic Relief (X FAC Neutral Test (D5) (# OBL+FACW dominants)	s (D1)
Win 24", can perch H2C ✓ Iron Deposits (B5) ✓ FAC Neutral Test (D5) (# OBL+FACW dominants	
FAC Neutral Test (D5) (# OBL+FACW dominants	w/in 12")
	" (NOO FOF E GORIEITAINS)
Surface Water Present? Yes No Depth of water (in.)	
Water Table Present? Yes No Depth to water (in.)	
Seeping in at that depth but not yet filled?:	
Saturation Present? Yes No Depth to sat. (in.) Wetland Hydrology Present	Yes No
(includes capillary fringe) Epi Endo Unknown	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	



Site 93. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.





Site 93. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 93. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region ____Borough/City:__ Applicant/Owner: Sampling Point #: Mac 5. , Jan Investigator(s): Firm: HDR Alaska, Inc. AMB134 Long. 157.348/1 ±__' NAD 83 Recorded on GPS #: ___ Marked on map? V Field Map #: Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: gentle slope (%): Aspect: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSSW4B Photo nos./descriptions: 327-330 Soil Wes _Camera #: ____ Veg Type (Viereck Level 4 or other): __ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: ____ HGM type: Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here. Distubel should birth willow closed low SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes 🔀 No _____ is the sampled area No ___ Hydric Soil Present? Yes 📉 within a wetland? Yes X Wetland Hydrology Present? No-Remarks (e.g., marginal?): VEGETATION (Use scientific names.) Dominance Test worksheet: Tree Stratum (dbh≥ 3") Abs.Cov.% Dom? Species Abs.Cov.% Dom? Number of Dominant Species Ind. Sp. That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 20% of total cover: 50% of total cover: __ Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Cov.% Dom Ind. Cov.% Dom OBL species Ind. FAC 7. $x_{2} = 96$ 48 FACW species FAC 8. FAC species FACU species UPL + NL species Column Totals: 130 Total Sapling/Shrub Cover: 65 50% of total cover: 20% of total cover: Prevalence Index = B/A = Herb Stratum Cov.% Dom Ind. Dom Ind. FAC 12. Hydrophytic Vegetation Indicators: FACW13. Dominance Test is>50% Prevalence Index is ≤3.0 FACU 16._ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 21. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. 22. Total Herb Cover: 50% of total cover: 17 ____ 20% of total cover: Hydrophytic Yes 🕌 No _____ Circular 1/10-ac plot \checkmark or other plot dimension: _____ % of bare ground: ____ Vegetation Present?

Remarks:

(where applicable)

% Cover of Wetland Bryophytes % Total Cover of Bryophytes

SOIL	· · · · · · · · · · · · · · · · · · ·	· · ·							Sampling Point #:95
Profile Description: (E	Describe to the dep	th needed to	o document the i	indicator	or confirm	the abse	nce of indicate	ors)	
Depth Horizon	Soil Matrix		Red	dox Feat	tures			α,α dip.	
(in.) <u>Name</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	(pos/ neg)	<u>Remarks</u> (or use comment number)
8-4 <u>Oi</u>				_	· ·		•		
10 DE _									
0-12 B I	1043/1				·			105	152 pakes of
<u>, , , , , , , , , , , , , , , , , , , </u>									

¹ Type: C = Concentration	on, D = Depletion, F	RM = Reduc	ced Matrix, CS=C	Coated S	Sand Grain	s ² Locatio	n: PL = Pore	Lining, RC	= Root Channel, M = Matrix
Hydric Soil Indicators				·					
	٠,		Indicators fo	r Proble	matic Hyd	dric Soils	3.		
Histosol or Histel (A1) (≥16",sat'd duri	ng wet			ange⁴ (TA		³On	e indicator	of hydrophytic vegetation,
	season) A2)(8-16", sat'd, un I with chroma ≤2)	derlain by			wales (TA5		hyd	rology, and	dicator of wetland I an appropriate landscape be present unless disturbed
	A4) (w/in 12"of grou	und	Alaska F	Redox w	ith 2.5Y Hu	ue	or p	roblematic	f color change in Remarks.
Thick Dark Surface			Alaska C Underlyi		vithout Hue r	e 5Y or Re	edder		
Alaska Gleyed (A1					p.91 of 200				
Alaska Redox (A14	•		Supplen	nent, exp	olain in Rei	marks)			
Alaska Gleyed Por			T						
Restrictive Layer (if pres			Drainage Clas		0				
- J F = 1	none		Soil Map Unit	Name:		Hyd	Iric Soil Prese	ent?	Yes No
Depth (inches) Comments:					····				
1.									
2.									
3.	S ₂₀								x
HYDROLOGY						B			
Wetland Hydrology Indi	icators (check one	s that apply	, msr from soil	surface	:):	Seco	ndary Indicato	rs (at least	2 are required)
Primary Indicators (any o	ne indicator is suffi	cient)					Vater-Stained		
Surface Water (A1)	_	Surface	Soil Cracks (B6	5)			rainage Patte	rns (B10) _	
🗻 High Water Table (A	2) (w/in 12")	Inundat	ion Visible on Ae	erial Ima	gery (B7)				iving Roots (C3) (w/in 12")
Saturation (A3) (w/in Water Marks (B1)	12")		y Vegetated Cor posits (B15)	ncave Su	urface (B8)		Presence of Re (pos. α,α or s Salt Deposits (oil color ch	n (C4) ange w/in 12")
Sediment Deposits (I	B2)		en Sulfide Odor ((C1) (w/i	in 12")		Stunted or Stre		e (D1)
Drift Deposits (B3)			ason Water Table				Seomorphic Po		
Algal Mat or Crust (B	34)	Other (e		o (oz) (•		s	Shallow Aquita (w/in 24", can	rd (D3) perch H2O	w/in 12")
Iron Deposits (B5)						<u>∠</u> F	AC Neutral Te	est (D5)	D4) (caused by water) FACU+UPL dominants)
Field Observations (in. fro	om ground surface)								
Surface Water Present?	Yes <u>*</u>	No	Depth of water	r (in.)	4_				
Water Table Present?	Yes <u>X</u>	No	Depth to water	r (in.)	3_				
	Seeping	in at that de	epth but not yet f	filled:					
Saturation Present?	Yes <u>X</u>	No	Depth to sat. (in.) <u>2</u>		Wetla	ınd Hydrolog	y Present?	Yes <u>X</u> No
(includes capillary fringe)			Epi Endo	Unknow	/n				
Describe Recorded Data	(stream gauge, mo	nitoring wel	l, aerial photos,	previous	s inspection	ns), if ava	ilable:	· · · · · · · · · · · · · · · · · · ·	
		A**							
Remarks: Gurface , beepty h	where he go	your tro	nts adjan	of k	plat				
geophy n	N ort 8								





Site 95. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 95. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 95. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

4.11	
Project: Ambler Argent Borough/City: Arch N4	Date: 9/10/17
Applicant/Owner: , DOT	Sampling Point #: _ 95 %
Investigator(s): Mac S. Jun J. Firm: H	IDD Alaska Inc
Lat. (dec.°) 67.11714 Long157.84624 ± 'NAD 83 Recorded of	on GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / c	
	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	_ If no, explain. we'ther HGM type: They
Are Vegetation //, Soil //, or Hydrology // significantly disturbed? Are "Normal Circu	umstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Quant bluste space	
Hydrophytic Vegetation Present? Yes X No Is the sampled are	ear on the second of the secon
Hydric Soil Present? Yes No within a wetland?	? Yes No
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % cal	n total >100%. Use 2012 indicator status.
Free Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. Dit mar 2 FACW 5.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2	
3 7	Total Number of Dominant Species Across All Strata:
4 8	(B)
Total Tree-Gover:	Percent of Dominant Species That are OBL, FACW, or FAC: / O / (A/B)
50% of total cover: 20% of total cover:	That are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind., Abs.Cov.% Dom? Ind.	
1. Voice vot 7 FAC 7.	OBL species
2. Vige will 20 × FAC 8	
3. led dec 15 FACW 9.	FAC species $\frac{77}{}$ $\times 3 = \frac{23}{}$
5. Pic mad 40 × FACM1.	FACU species X4=
6. Pot non 1/2 FAC 12.	UPL + NL species X5=
Total Sapling/Shrub Cover: /04	Column Totals:(A)
- 20	7.54
So% of total cover: 20% of total cover: 20% of total cover:	Prevalence Index = B/A =/
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Erivay 5 FACW 12.	Under why the Vocateties In attach
2. Car faire 30 + FAC 13.	Hydrophytic Vegetation Indicators:
3. Pub dra 2 Rew 14.	Dominance Test is>50% Prevalence Index is ≤3.0
4. Feltri FACW 15.	Trevalence index is 20.0
5 16 6 17	Morphological Adaptations¹ (Provide supporting
7 18	data in Remarks or on a separate sheet)
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10 21	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 38	, e
50% of total cover: 7.6	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes <u>ళ్</u> చా % (where applicable)	·
Remarks: Farther mosts	
The control of the co	

SOIL	Sampling Point #: 96
Profile Description: (Describe to the depth needed to document the indicator or	confirm the absence of indicators)
Depth Horizon Soil Matrix Redox Feature	· · · · · · · · · · · · · · · · · · ·
(in.) (opt.) Color (moist) % Color (moist) %	Type ¹ Loc ² Texture (pos/ Remarks neg) (or use comment number)
2.0 6: 2 2000 0 0 0	
0-8 B WRZ12	Sil pos 150 organic pou
8+ permatrost	
¹ Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated San	and Grains ² Location: PL = Pero Lining PC = Peet Channel M = Matrix
Hydric Soil Indicators (check ones that apply, measure from top of mineral la	
- 1997年 - 19	
History of Wistor (Ad) (Ad)	30no indicatos ef hadronista anno 111
Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season) Histic Epipedon (A2) (8-16" organics, sat'd, Alaska Color Chan	hydrology, and an appropriate landscape
underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12"of ground	position must be present unless disturbed or problematic.
surface, w in this pit	
Underlying Laye	nout Hue 5Y or Redder
Alaska Gleyed (A13) Other (e.g., see p.91	
Alaska Redox (A14) Supplement; explai	n in Remarks)
Alaska Gleyed Pores (A15)	
Restrictive Layer (if present) Drainage Class:	We come to the control of the contro
Type: Nove Soil Map Unit Name:	Hydric Soil Present? Yes No
1. 2. 3.	
YDROLOGY	
Wetland Hydrology Indicators (check ones that apply, measure from soil surfa Primary Indicators (any one indicator is sufficient)	
	Water-Stained Leaves (B9)
Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) (w/in 12") Inundation Visible on Aerial Image	Drainage Patterns (B10)
Saturation (A3) (w/in 12") — Water Marks (B1) — Marl Deposits (B15)	Dropping of Deduced Iron (C4)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) (w/in	
Drift Deposits (B3) Dry-Season Water Table (C2) (w/iii	the first of the f
Algal Mat or Crust (B4) Other (explain)	Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
Iron Deposits (B5)	MIcrotopographic Relief (D4) (caused by water) X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)
Field Observations (in. from ground surface):	(# OBETT AGW dominants > # FACUTUPE dominants)
Surface Water Present? Yes No Depth of water (in.)	
Water Table Present? Yes No Depth to water (in.)	
Seeping in at that depth but not yet filled?:	
Saturation Present? Yes X No Depth to sat. (in.)	
(includes capillary fringe) Epi Endo Unknown	Tes NO
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous in	Inspections), if available:
· Constant	ispections), if available.
Remarks:	



Site 96. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 96. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 96. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 96. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region

	al lab
Project: How Heport Borough/City: How M	
Applicant/Owner: DOT	Sampling Point #: 99
	HDR Alaska, Inc.
Lat. (dec.°) 67.11141 Long157.85129 ± NAD 83 Recorded o	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / c	,
Photo nos./descriptions:Camera #:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circu	
Are Vegetation N , Soil N , or Hydrology N naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? Yes No Is the sampled are	
Hydric Soil Present? Yes No within a wetland?	Yes No
Wetland Hydrology Present? Yes No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % care	
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:
2 6	Total Number of Dominant
3 7	Species Across All Strata: (B)
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) Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind. 1. Betnar 65 7 7.	OBL species X1=
2. Led dec 40 x FACW 8.	FACW species
3. Miccialy 25 FAC 9.	FAC species 127 x3= 381
4. Vuce vit 10 FAC 10.	FACU species X4=
5. Promas G FACW11.	UPL + NL species X5=
6. Emp ria 10 FAC 12.	Column Totals: 176 (A) 479 (B)
Total Sapling/Shrub Cover: 156	
50% of total cover: 78 20% of total cover: 31. 2	Prevalence Index = B/A = 2.72
Herb Stratum	
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. fub ch 3 FACW 12.	Hydrophytic Vegetation Indicators:
2. Fgu Fy FAC 13.	✓ Dominance Test is>50%
3. Car bry 10 + FAC 14.	Prevalence Index is ≤3.0
5 16	
6	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	
8 19	Problematic Hydrophytic Vegetation ¹ (Explain)
9 20	
10	¹ Indicators of hydric soil and wetland hydrology must
11	be present unless disturbed or problematic.
Total Herb Cover: 20	
50% of total cover: 10 20% of total cover:	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No Present?
% Cover of Wetland Bryophytes% Total Cover of Bryophytes% (where applicable)	
Remarks:	
·	
	•

SOIL)occrintion	: (Describe to the de	nth noods	od to document the	in din ata					Sampling Point #: 99
							the abser	ice of indicat	ors)	***
Depth	Horizon	Soil Matrix			dox Fea				α,α dip.	Damada
(in.) 7-0	(opt.)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type¹	Loc²	Texture	(pos/ neg)	Remarks (or use comment number)
0-2	<u> </u>	1042/1		<u>, , , , , , , , , , , , , , , , , , , </u>		* ₁₂		sil	nea	159 organk
2-5	BI	Towall	-						neg	
5-13	n = 9	1/1/1/1/1								
5-17	BZ	104614					***************************************		nes	
¹ Type: C	= Concentr	ration, D = Depletion	, RM = Re	duced Matrix, CS=	Coated S	Sand Grain	s ² Locatio	n: PL = Pore	Lining, RC	= Root Channel, M = Matrix
Hydric S	oil Indicato	rs (check ones that	apply, me	easure from top of	minera	l layers un	less othe	rwise noted) :	
Standard	d Indicators	·		Indicators fo	r Proble	ematic Hyd	dric Soils	3.		
		el (A1) (≥16″organic vet period of growing se		Alaska	Color Cl	nange⁴ (TA	4)			of hydrophytic vegetation, dicator of wetland
His	tic Epipedor underlain by i	n (A2) (8-16" organics mineral soil with chrom	i, sat'd, a ≤2)	Alaska	Alpine S	wales (TA	5)	pos	sition must l	l an appropriate landscape pe present unless disturbed
Hyd	Irogen Sulfic surface; @	de (A4) (within 12"of " in this pit	ground			vith 2.5 Y Ho		⁴Gi	problematic ve details o	, f color change in Remarks.
Thic	ck Dark Surf	face (A12)			Gleyed verlying La	without Hue ayer	e 5Y or Re	dder		
	ska Gleyed	• •				.91 of 2007				
	ska Redox (• •		Supple	ement; ex	plain in Rem	arks)			
		Pores (A15)								
	e Layer (if p			Drainage Cla		ND				
Type:		rone		Soil Map Unit	Name:		Hyd	ric Soil Pres	ent?	Yes No <u>}</u>
Depth	(inches) _									
1. Organ 2. Mas 3.	irs play, have a	. Moist from response	early row	in Underon	openent	offer Un	Insere i	not more	tatall	
HYDROL	OGY		l.	2.2				1 1 1 1 1 1 1		
. 1,10,201		Indicators (check o	nes that a	oply, measure fron	n soil su	ırface):	Seco	ndary Indicati	ors (at least	2 are required)
Primary In	ndicators (any one indicator is	sufficient)					Vater-Stained		
<u></u> ✓ Surfa	ce Water (A	(1)	K Surf	ace Soil Cracks (Bo	3)	1.0		rainage Patt	erns (B10) _	£*
High	Water Table	e (A2) (w/in 12")	Inun	idation Visible on A	erial Ima	agery (B7)	<u></u>	xid'd Rhizos	pheres on L	iving Roots (C3) (within 12")
T	ation (A3) (v r Marks (B1	•	1	rsely Vegetated Co	ncave S	urface (B8)	, -		soil color ch	n (C4) nange w/in 12")
	nent Deposi	•	1	l Deposits (B15) rogen Sulfide Odor	(C1) (44)	/in 10"\	9 1 2 -1 -	alt Deposits		- (D4)
1	Deposits (B3		\$	Season Water Tab		•	1	tunted or Str		
1	Mat or Crus		l	er (explain)	ie (O2) (W/III 24)	s	Geomorphic P	ard (D3)	√
√ Iron E	Deposits (B5	5)						w/in 24", can Norotopograf		W/in 12") D4) (caused by water)
		,						AC Neutral T	est (D5)	> # FACU+UPL dominants)
Field Obs	ervations (in	. from ground surfac	:e):			***************************************			23	e. = de.imiditoj
Surface W	later Preser	nt? Yes	No 🔀	_ Depth of wate	er (in.)					
Water Tab	ole Present?	Yes	No 🔀	Depth to wate	er (in.)					
		Seepir	ng in at tha	at depth but not yet						
Saturation	Present?	Yes	No $\overline{\mathcal{L}}$				Wetla	nd Hydrolog	y Present?	? Yes No <u>}</u>
	capillary frin			· ·	Unknov					
Describe F	Recorded Da	ata (stream gauge, r	nonitorina	well aerial photos	previou	s inspectio	ne) if ava	ilahla:		

Remarks:



Site 99. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 99. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 99. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 99. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

A sa A L	8.
Project: Borough/City: Hatte	Date: 9/10/17
Applicant/Owner: Dos	Sampling Point #: <i>\07</i>
Investigator(s): Mac G. Jan J Firm: H	
Lat. (dec.°) 67 107 +3 Long. 157.76-474 ± 'NAD 83 Recorded c	on GPS #: Marked on map? Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear/ convex / concave Shape up/downslope: linear/ c	
Photo nos./descriptions: 357-360 bi veg Camera#:	. /
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circulate Vegetation M , Soil M , or Hydrology M naturally problematic? If needed, explain	
	answers here.
Hydrophytic Vegetation Present? Yes No	and antomora Little
Is the sampled are	_
Wetland Hydrology Present? Yes No Within a wetland?	The state of the s
	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % ca	n total >100%. Use 2012 indicator status. Dominance Test worksheet:
Tree Stratum (dbh≥ 3")	and the second of the second o
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1 5	Number of Dominant Species That are OBL, FACW, or FAC: (A)
2	Total Number of Dominant
3 7	Species Across All Strata: / (B)
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)
56% of total cover: 20% of total cover:	Prevalence Index worksheet:
-Sapling/Shrub-Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 87 x1=87
1. Bet nan 3 FAC 7	FACW species X2=
2	FAC species 5 x3= 15
3 9 4 10	FACU species X4=
5 11	UPL + NL species X5=
6	Column Totals: 92 (A) / 02 (B)
Total Sapling/Shrub Cover	(B)
50% of total cover:	Prevalence Index = B/A =
Herb Stratum	Totalonos mass.
Abs.Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Car ann 50 X 0BL12.	Hydrophytic Vegetation Indicators:
2. Hryp ul 2 OBL 13. 3. Paton 5 OBL 14.	✓ Dominance Test is>50%
3. Polpa 5 OEL 14. 4. Cal can 2 FAC 15.	Prevalence Index is ≤3.0
516	Marshalada (Alanda) and A
617	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
7 18	Problematic Hydrophytic Vegetation ¹ (Explain)
8	Troblematic Hydrophytic Vegetation (Explain)
9	1
10 21 11 22	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Total Herb Cover: 92	1,3
50% of total cover: 46 20% of total cover: 18.4	Madanahadia
	Hydrophytic Vegetation Yes No
Circular 1/10-ac plot or other plot dimension: % of bare ground: % Cover of Wetland Bryophytes % Total Cover of Bryophytes % (where applicable)	Present?
After Stratum	combined uf Shrub <5%.

Depth Horizon Soil Matrix		confirm the a	bsence of indica	tors)	
Deput Hotizon Johnston	Redox Feature	s		α,α dip.	
(in.) (opt.) Color (moist) % Color (r	noist) <u>%</u> <u>T</u>	ype ¹ Loc	² Texture	(pos/ neg)	Remarks (or use comment number)
0-20 01		3 .			
		····			
Type: C = Concentration, D = Depletion, RM = Reduced Mar	trix, CS=Coated San	d Grains ² Loo	cation: PL = Por	Lining, RC =	= Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, measure fro	m top of mineral lay	ers unless	otherwise noted):	
Standard Indicators: Indi	cators for Problema	itic Hydric S	oils³:		
Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)	_ Alaska Color Chang	ge⁴ (TA4)	or	e primary ind	of hydrophytic vegetation, icator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2) Hydrogen Sulfide (A4) (within 12"of ground	es (TA5)	hydrology, and an appropriate landscape position must be present unless disturbed or problematic.			
surface; @" in this pit	_ Alaska Redox with : Alaska Gleyed with			ive details of	color change in Remarks.
Thick Dark Surface (A12)	Underlying Layer		i Reddei		
Alaska Gleyed (A13)	Other (e.g., see p.91 Supplement; explain				
Alaska Redox (A14)	Supplement, explair	i iii Kemarks)			
Alaska Gleyed Pores (A15)					
10 . 0	nage Class:	~			A CANADA A C
	Map Unit Name:		Hydric Soil Pre	sent?	Yes No
Depth (inches)					48. y
Comments:					
/DROLOGY					
Vetland Hydrology Indicators (check ones that apply, meas	sure from soil surfa	ce): S	Secondary Indica	ors (at least 2	2 are required)
Primary Indicators (any one indicator is sufficient)		_	Water-Staine		
Surface Water (A1) Surface Soil C	racks (B6)		 Drainage Pat	terns (B10)	,
	· ·				C: 7 /
∠ High Water Table (A2) (w/in 12") Substituting Inundation Vis ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ Inundation Vis ∠ High Water Table (A2) (w/in 12") ∠ High Water Table (ving Roots (C3) (within 12")
			Oxid'd Rhizos Presence of I		ving Roots (C3) (within 12") (C4)
Saturation (A3) (w/in 12") Sparsely Vege Water Marks (B1) Marl Deposits	etated Concave Surfa (B15)	ace (B8) -	Presence of I	Reduced Iron soil color cha	
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Sparsely Vege Marl Deposits Hydrogen Sulf	etated Concave Surfa	ace (B8) -	Presence of I (pos. α,α or	Reduced Iron soil color cha (C5)	(C4) ange w/in 12")
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Sparsely Vege Marl Deposits Hydrogen Sulf	etated Concave Surfa (B15)	ace (B8) - 2") _	Presence of I (pos. α,α or Salt Deposits	Reduced Iron soil color cha (C5) ressed Plants	(C4) ange w/in 12")
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Sparsely Vege Marl Deposits Hydrogen Sulf Dry-Season W	etated Concave Surfa (B15) īde Odor (C1) (w/in 1 /ater Table (C2) (w/in	ace (B8) - 2") _	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic Shallow Aqui	Reduced Iron soil color cha (C5) ressed Plants Position (D2)	(C4) ange w/in 12") ; (D1)
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Sparsely Vege Marl Deposits Hydrogen Sulf Dry-Season W	etated Concave Surfa (B15) īde Odor (C1) (w/in 1 /ater Table (C2) (w/in	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O nobic Relief (D5) Fest (D5)	(C4) ange w/in 12") 5 (D1) w/in 12") 4) (caused by water)
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Sparsely Vege Hydrogen Sulf Dry-Season W Other (explain	etated Concave Surfa (B15) īde Odor (C1) (w/in 1 /ater Table (C2) (w/in	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O nobic Relief (D5) Fest (D5)	(C4) ange w/in 12") s (D1) 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) Sediment Deposits (B3) Other (explain of the company of the comp	etated Concave Surfa (B15) ide Odor (C1) (w/in 1 /ater Table (C2) (w/in)	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O nobic Relief (D5) Fest (D5)	(C4) ange w/in 12") s (D1) w/in 12") 4) (caused by water)
Saturation (A3) (w/in 12") Sparsely Vege Water Marks (B1) Marl Deposits Sediment Deposits (B2) Hydrogen Sulf Drift Deposits (B3) Dry-Season W Algal Mat or Crust (B4) Other (explain Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes No Dept	etated Concave Surfa (B15) iide Odor (C1) (w/in 1 /ater Table (C2) (w/in)	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O nobic Relief (D5) Fest (D5)	(C4) ange w/in 12") 5 (D1) w/in 12") 4) (caused by water)
Saturation (A3) (w/in 12") Sparsely Vege Water Marks (B1) Marl Deposits Sediment Deposits (B2) Hydrogen Sulf Drift Deposits (B3) Dry-Season W Algal Mat or Crust (B4) Other (explain Iron Deposits (B5) Field Observations (in. from ground surface): Surface Water Present? Yes No Dept Water Table Present? Yes No Dept	etated Concave Surfa (B15) Tide Odor (C1) (w/in 1 /ater Table (C2) (w/in) h of water (in.)	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O nobic Relief (D5) Fest (D5)	(C4) ange w/in 12") 5 (D1) w/in 12") 4) (caused by water)
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): Surface Water Present? Vater Table Present? Yes Seeping in at that depth but	etated Concave Surfa (B15) ide Odor (C1) (w/in 1 /ater Table (C2) (w/in) h of water (in.) ut not yet filled?:	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", cai Microtopogra FAC Neutral (# OBL+FAC	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O n phic Relief (D Fest (D5) W dominants >	(C4) ange w/in 12") s (D1) w/in 12") v4) (caused by water) v # FACU+UPL dominants)
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): Surface Water Present? Ves No Dept Seeping in at that depth but Saturation Present? Yes No Dept	etated Concave Surfa (B15) ide Odor (C1) (w/in 1 /ater Table (C2) (w/in) h of water (in.)	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O n phic Relief (D Fest (D5) W dominants >	(C4) ange w/in 12") s (D1) w/in 12") 4) (caused by water)
Saturation (A3) (w/in 12") Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Seled Observations (in. from ground surface): Surface Water Present? Vater Table Present? Yes Seeping in at that depth but	etated Concave Surfa (B15) ide Odor (C1) (w/in 1 /ater Table (C2) (w/in) h of water (in.) th to water (in.) ut not yet filled?: Endo Unknown	2")	Presence of I (pos. α,α or Salt Deposits Stunted or St Geomorphic I Shallow Aqui (w/in 24", car Microtopogra FAC Neutral (# OBL+FAC	Reduced Iron soil color cha (C5) ressed Plants Position (D2) ard (D3) n perch H2O n phic Relief (D Fest (D5) W dominants >	(C4) ange w/in 12") s (D1) w/in 12") v4) (caused by water) v # FACU+UPL dominants)



Site 107. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 107. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 107. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 107. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM - Alaska Region ____Borough/City:__ NW Date: 9/10/12 Applicant/Owner: Sampling Point #: 10% __ Firm: HDR Alaska, Inc. Investigator(s): 150' from HMB 140 Long. 154.46372 ± NAD 83 Recorded on GPS #: Narked on map? Y Field Map #: Local relief: Shape across slope: linear / convex / concave Shape up/downslope: /linear / convex / concave NWI classification: Soil PS Camera #: ____ Veg Type (Viereck Level 4 or other): ___ Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. Are Vegetation M, Soil M, or Hydrology M, significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area Hydric Soil Present? Yes No A 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") Cov.% Dom? Ind. Cov.% Dom? Number of Dominant Species Ind. That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by: Abs.Cov.% Dom? Ind. OBL species FACW species FAC species FACU species UPL + NL species Column Totals: Total Sapling/Shrub Cover: 50% of total cover: 50. 5 Prevalence Index = B/A = 20% of total cover: Abs.Cov.% Dom? Ind. 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) 21. 1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. Total Herb Cover: 20% of total cover: Hydrophytic Vegetation Circular 1/10-ac plot ____ or other plot dimension: _____ % of bare ground: Present? % Cover of Wetland Bryophytes _______ % Total Cover of Bryophytes ______ (where applicable)

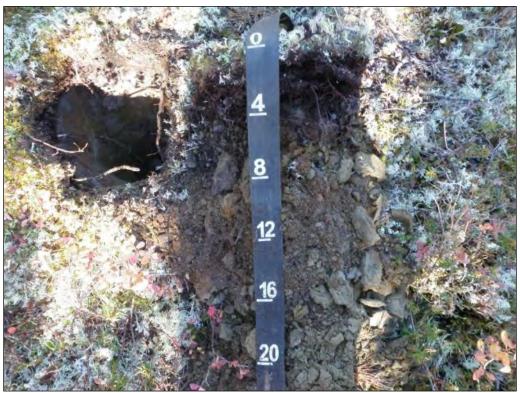
Remarks: Reinder Inten 159 Some ephypnen at oldope part of plot

SOIL			Sampling Point #: 108
Profile Description: (Describe to the depth needed to	document the indicator or confirm the	absence of indicators)	
Depth Horizon <u>Soil Matrix</u>	Redox Features	α,α dip.	Marin Baker
(in.) (opt.) Color (moist) % C	Color (moist) % Type ¹ L	_oc² <u>Texture</u> (pos/ neg)	Remarks (or use comment number)
3.0 Oi			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0-2 E 104R4/1		sst neg	
2-8 BI 10484/4 80		Sil nea	erragarishi kirilanda karilanda karilanda karilanda karilanda karilanda karilanda karilanda karilanda karilanda
8-17 B2 1048413		Sil near	
¹ Type: C = Concentration, D = Depletion, RM = Reduce	ed Matrix, CS=Coated Sand Grains ² l	ocation: PL = Pore Lining, RC	= Root Channel, M = Matrix
Hydric Soil Indicators (check ones that apply, measu			,
Standard Indicators:	Indicators for Problematic Hydric		
Histosol or Histel (A1) (≥16"organic surface,			r of hydrophytic vegetation,
sat'd during wet period of growing season)	Alaska Color Change⁴ (TA4)	one primary ir	ndicator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Alaska Alpine Swales (TA5)	position must	d an appropriate landscape be present unless disturbed
Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	Alaska Redox with 2.5Y Hue		of color change in Remarks.
Thick Dark Surface (A12)	Alaska Gleyed without Hue 5\ Underlying Layer	Y or Redder	
Alaska Gleyed (A13)	Other (e.g., see p.91 of 2007		
Alaska Redox (A14)	Supplement; explain in Remark	s)	
Alaska Gleyed Pores (A15)	Ţ		
Restrictive Layer (if present)	Drainage Class: WD		1987 - K
Type: MDMQ	Soil Map Unit Name:	Hydric Soil Present?	Yes No
Comments:			·
1. ************************************			· .
3. ************************************			
HYDROLOGY			
Wetland Hydrology Indicators (check ones that apply	measure from soil surface):	Secondary Indicators (at leas	t 2 are required)
Primary Indicators (any one indicator is sufficient)	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	₩ Water-Stained Leaves (E	
	Soil Cracks (B6)	Drainage Patterns (B10)	
	ion Visible on Aerial Imagery (B7)	ā	Living Roots (C3) (within 12")
	y Vegetated Concave Surface (B8)	Presence of Reduced Iro	n (C4)
The state of the s	posits (B15)	Salt Deposits (C5)	
	en Sulfide Odor (C1) (w/in 12")	Stunted or Stressed Plan	
Drift Deposits (B3) Dry-Sea	ason Water Table (C2) (w/in 24")	Geomorphic Position (D2	2) _ (,
Algal Mat or Crust (B4) Other (€	explain)	Shallow Aquitard (D3)) w/in 10"\
Iron Deposits (B5)		(w/in 24", can perch H20 MIcrotopographic Relief	· ·
TOTAL Deposits (DO)	•	FAC Neutral Test (D5)	> # FACU+UPL dominants)
Field Observations (in. from ground surface):			
Surface Water Present? Yes No	Depth of water (in.)		
Water Table Present? Yes No _X	Depth to water (in.)		
Seeping in at that de	epth but not yet filled?:		
Saturation Present? Yes No	Depth to sat. (in.)	Wetland Hydrology Present	? Yes No 🗸
(includes capillary fringe)	Epi Endo Unknown		
Describe Recorded Data (stream gauge, monitoring well), if available:	25.5

Remarks:	۸.		



Site 108. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 108. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 108. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 108. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Arrent Borough/City: Hoche	NW Date: 9/10/12
Applicant/Owner:	Sampling Point #: 109
Investigator(s): Nuc S. Jun 5. Firm: h	HDR Alaska, Inc.
Lat. (dec.°) 67.10669 Long157.86340 ± 'NAD 83 Recorded of	
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landfo	
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear /	
	Veg Type (Viereck Level 4 or other):
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: No:	
Are Vegetation M , Soil M , or Hydrology M significantly disturbed? Are "Normal Circu	
Are Vegetation, Soil, or Hydrology naturally problematic? If needed, explain	answers here.
SUMMARY OF FINDINGS Bluck game wood	nd I good shows wellow
Hydrophytic Vegetation Present? Yes No Is the sampled are	24
Hydric Soil Present? Yes No within a wetland?	
Wetland Hydrology Present? Yes X No	Remarks (e.g., marginal?):
VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % cal	
Tree Stratum (dbh≥ 3")	Dominance Test worksheet:
Species Cov.% Dom? Ind. Species Cov.% Dom? Ind. 1. 1/2 may 5 FACW 5.	Number of Dominant Species That are OBL, FACW, or FAC: (A)
26	Total Number of Dominant
3 7	Species Across All Strata:
4 8	
Total Tree Cover:	Percent of Dominant Species That are OBL, FACW, or FAC: /// (A/B)
50% of total cover: 2.5 20% of total cover: /. 0	Prevalence Index worksheet:
Sapling/Shrub Stratum (woody plants < 3" dbh)	Total % Cover of: Multiply by:
Abs.Cov.% Dom? Ind. Abs.Cov.% Dom? Ind.	OBL species 2 X1= Z
1. Pic Mar 30 X FACW 7. Vane vil 7 FAC 2. EMP Non 5 FAC 8.	FACW species 55 X2= // 0
21/11/11/11	FAC species 7 7 x3= 23/
4. Bet nan 20 FAC 10.	FACU species X4=
5. <u>Led dec</u> 20 <u>FACW 11.</u>	UPL + NL species X5=
6. Vac Oxy 2 OBC 12.	Column Totals:
Total Sapling/Shrub Cover: 109	
50% of total cover: 54, 5 20% of total cover: 21.8	Prevalence Index = B/A = 2,56
Herb Stratum	1 19 19 19 19 19 19 19 19 19 19 19 19 19
Abs. Cov.% Dom? Ind. Abs. Cov.% Dom? Ind.	
1. Car hr 20 × FAC 12. 2. Rup cha 15 + FACW13.	Hydrophytic Vegetation Indicators:
3. FACW14.	Dominance Test is>50%
4	Prevalence Index is ≤3.0
5 16	Morphological Adaptations ¹ (Provide supporting
6 17	data in Remarks or on a separate sheet)
7	Problematic Hydrophytic Vegetation ¹ (Explain)
8 19 9 20 20	
10	¹ Indicators of hydric soil and wetland hydrology must
11 22	be present unless disturbed or problematic.
Total Herb Cover: 42	
50% of total cover: 21 20% of total cover: 8.4	Hydrophytic
Circular 1/10-ac plot or other plot dimension: % of bare ground:	Vegetation Yes No
% Cover of Wetland Bryophytes% Total Cover of Bryophytes%	Present?
(where applicable) Forther	
Remarks: Sphannum 15%	
Lichen	

SOIL							Sampling Point #: <u>109</u>
Profile Description: (Describe	to the depth needed t	o document the indicator	r or confirm t	he absenc	e of indicato	rs)	
Depth Horizon Si	oil Matrix	Redox Fea	atures			α,α dip.	
(in.) (opt.) Color (r	moist) <u>%</u>	Color (moist) %	Type ¹	Loc²	Texture	(pos/ neg)	Remarks (or use comment number)
10-5 Oi							GRAND CONTROL OF THE
5-0 <u>De</u>							record statement
0-6 B 104R	3/2				41	205	
			<u> </u>	<u></u>		<u>'</u>	<u> </u>
							•
¹ Type: C = Concentration, D = L							Root Channel, M = Matrix
Hydric Soil Indicators (check of	ones that apply, meas				vise noted):		Angles
Standard Indicators:		Indicators for Proble	ematic Hydr	ic Soils':	. 3	je s	
Histosol or Histel (A1) (≥1) sat'd during wet period of o		Alaska Color Cl	hange ⁴ (TA4)) .			f hydrophytic vegetation, cator of wetland
Histic Epipedon (A2) (8-16 underlain by mineral soil w	6" organics, sat'd,	Alaska Alpine S	Swales (TA5)		hydı	rology, and a	an appropriate landscape present unless disturbed
Hydrogen Sulfide (A4) (wi surface; @ " in this	ithin 12"of ground	Alaska Redox v	vith 2.5Y Hue	•	or p	roblematic.	color change in Remarks.
Thick Dark Surface (A12)	i Tomas on the distance of	Alaska Gleyed Underlying La		5Y or Red	der		
Alaska Gleyed (A13)		Other (e.g., see p	p.91 of 2007				
Alaska Redox (A14)		Supplement; ex	cplain in Remar	rks)			
Alaska Gleyed Pores (A15))						
Restrictive Layer (if present)		Drainage Class:	PD				M
Type:		Soil Map Unit Name:	aur vide	Hydri	c Soil Prese	ent?	/es No
Comments:	y			t kitt ut a			
1. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.					1967年(李成章) 第四章 1967年(1967年)	Æ	
HYDROLOGY	in in the second				1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
Wetland Hydrology Indicators	(check ones that appl	y, measure from soil si	urface):	Second	dary Indicato	rs (at least 2	2 are required)
Primary Indicators (any one inc	4	e Soil Cracks (B6)			ater-Stained	The state of the state of	,
		e Son Cracks (Bo) ition Visible on Aerial Ima	agon/ (P7)		ainage Patte		ding Poots (C2) (diff. 400)
Saturation (A3) (w/in 12")		ely Vegetated Concave S			esence of Re		ving Roots (C3) (within 12") (C4)
Water Marks (B1)		eposits (B15)	surface (Do)	" (r		oil color cha	ingé w/in 12")
Sediment Deposits (B2)	Hydrog	gen Sulfide Odor (C1) (w	ı/in 12")		unted or Stre		(D1)
Drift Deposits (B3)	Dry-Se	eason Water Table (C2)	(w/in 24")		omorphic Po	, ,	
Algai Mat or Crust (B4)	Other ((explain)			allow Aquita ⊭in 24", can⊣		w/in 12")
Iron Deposits (B5)					crotopograpi .C Neutral Te		4) (caused by water)
Field Objection (C. Company)				(# OBL+FACW	dominants >	# FACU+UPL dominants)
Field Observations (in. from grou	*	Denth of water (in)	3				
Surface Water Present? Ye		Depth of water (in.)	~				
Water Table Present? Ye	4.4 T. Visio	Depth to water (in.) _ depth but not yet filled?:					
Saturation Present? Ye	es_ <u>></u> No	Depth to sat. (in.)	2	Wetlar	d Hydrolog	y Present?	Yes <u> </u>
(includes capillary fringe)	1975 (TW-14, \$1.7)	Epi Endo Unkno	wn .			-	a to to
Describe Recorded Data (stream	gauge, monitoring we			s), if avail	able:		
Remarks:							



Site 109. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.





Site 109. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 109. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region _____Borough/City: fre Viv Du Date: _____ Project: Applicant/Owner: ____ Sampling Point #: Investigator(s): Firm; HDR Alaska, Inc. Long. 157.759777 ± NAD 83 Recorded on GPS #: Narked on map? √ Field Map #: _ Lat. (dec.°) 64 10 561 Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: ______Slope (%): ____ Aspect: Local relief: Shape across slope: linear convex / concave Shape up/downslope: linear/ convex / concave NWI classification: Photo nos./descriptions: _____Camera #: ____ Veg Type (Viereck Level 4 or other): Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ____ No: ____ If no, explain. HGM type: Are Vegetation M, Soil M, or Hydrology M significantly disturbed? Are "Normal Circumstances" present? Yes M No ____ Are Vegetation M, Soil M, or Hydrology M naturally problematic? If needed, explain answers here. SUMMARY OF FINDINGS Hydrophytic Vegetation Present? is the sampled area Hydric Soil Present? Yes ____ No X within a wetland? Yes No 🗡 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") Cov.% Dom? Ind. Species Cov.% Dom? Number of Dominant Species That are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Total Tree Cover: That are OBL, FACW, or FAC: Prevalence Index worksheet: 50% of total cover: _ 20% of total cover: Sapling/Shrub Stratum (woody plants < 3" dbh) Total % Cover of: Multiply by Abs.Cov.% Dom? Ind. Ind. OBL species FACW species FAC species FACU species UPL + NL species Column Totals: Total Sapling/Shrub Cover: 50% of total cover: _ 81.5 _____20% of total cover: _ Abs.Cov.% Dom? Abs. Cov.% Dom? Ind. FAC 12. Hydrophytic Vegetation Indicators: Dominance Test is>50% Prevalence Index is ≤3.0 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 21. ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. ___ 22.__ 20 Total Herb Cover: 50% of total cover: __________ 20% of total cover: Hydrophytic Vegetation Circular 1/10-ac plot ✓ or other plot dimension: ______ % of bare ground: Present? % Cover of Wetland Bryophytes ______ % Total Cover of Bryophytes _____ (where applicable) Remarks:

SOIL										Sampling Point #: <i>ll2</i>
Profile D	escription:	(Describe to the dep	oth needed t	o document the ir	ndicator	or confirm	the abse	nce of indica	tors) -	
Depth	Horizon	Soil Matrix	 .	Red	lox Feat	tures			α,α dip.	
<u>(in.)</u>	<u>(opt.)</u>	Color (moist)	<u>%</u>	Color (moist)	<u>%</u> .	Type ¹	<u>Loc²</u>	Texture	(pos/ neg)	Remarks (or use comment number)
8-0	Oi									1.
0-3	A	10483/1						sil	neg	
3-12	<u>_</u> B_	1043/2				: 41		<i>\$i</i> _	neg	
Type: C	= Concentra	ation, D = Depletion,	RM = Redu	ced Matrix, CS=C	 coated S	Sand Grain	s ² Locatio	on: PL = Pore	—— e Lining, RC	= Root Channel, M = Matrix
Hydric S	oil Indicator	rs (check ones that a	apply, meas	ure from top of i	mineral	layers un	less othe	erwise noted	l):	
Standard	Indicators	**************************************		Indicators for	Proble	ematic Hyd	iric Soils	3		and the second second second second
	sat'd during w	el (A1) (≥16"organic s et period of growing sea (A2) (8-16" organics,	ison)	2		nange⁴ (TA	. African	Mari on hy	e primary ind drology, and	of hydrophytic vegetation, dicator of wetland an appropriate landscape
Hyc	underlain by n Irogen Sulfid	nineral soil with chroma le (A4) (within 12"of g	≤2)			wales (TA5 vith 2.5Y Hu		or	problematic.	pe present unless disturbed f color change in Remarks.
	surface; @ ck Dark Surfa	" in this pit ace (A12)	and the state of t	Alaska G		vithout Hue				
Alas	ska Gleyed (A13)	\$45024 B			.91 of 2007				
Alas	ska Redox (A	114) - John St. 1971, 1984.		Suppler	ment; ex	plain in Rem	arks)			
Alas	ska Gleyed F	Pores (A15)	7 t .	,						
Restrictiv	e Layer (if p r			Drainage Clas	s:	W				4
Type:	(inches)	NOW		Soil Map Unit	Name:	400	Нус	dric Soil Pre	sent?	Yes No No
2. 3.	Lower	by soil is	inted. E	atremely we	<i>/ 6</i>	mothen	s mi	d now	b not h	e salwely
YDROL		espera			!!	<u> </u>				
		ndicators (check on any one indicator is s	for the same of the following of	y, measure from	SOII SU	іпасе):		ndary indica Water-Staine		2 are required)
	ce Water (A			e Soil Cracks (B6).			Drainage Pat		,
4		(A2) (w/in 12")	- T	tion Visible on Ae		agery (B7)	- 8			iving Roots (C3) (within 12")
	ation (A3) (v r Marks (B1)			ly Vegetated Cor	icave S	urface (B8) -	Presence of I	Reduced Iron soil color ch	
	nent Deposit		VI ATTORNEY TO SERVE	en Sulfide Odor	(C1) (w/	/in 12")		Stunted or St		s (D1)
	Deposits (B3		Dry-Se	ason Water Table	e (C2) (w/in 24")	1	Geomorphic I	and the second	
Algal	Mat or Crus	t (B4)	Other (explain)				Shallow Aqui		
1	Deposits (B5	, ,		САРІСІНІ			<u> </u>	(w/in 24", ca Microtopogra FAC Neutral	phic Relief (I	w/in 12") O4) (caused by water)
	<u> </u>					Ç.,				> # FACU+UPL dominants)
	•	. from ground surface								
	Vater Presen		No 🔀	Depth of water						,
Water Tal	ole Present?	er en	No <u>K</u>	Depth to wate			-			
				lepth but not yet f						En out
	Present?	Yes	No 🔍	Depth to sat. (in.)		Weti	and Hydrolo	gy Present?	? Yes No 🚣
	capillary fring Recorded Da	ge) ata (stream gauge, m	onitorina w	Epi Endo			ins) if av	ailable:		·
,				, priotos,	p. 3.100		,,			
Remarks:										



Site 112. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 112. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 112. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 112. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

WETLAND DETERMINATION DATA FORM – Alaska Region

WW Date: 910117
Sampling Point #: 1/5
HDR Alaska, Inc.
on GPS #: Marked on map? Field Map #:
orm: Dap lassion_Slope (%): Aspect:
convex / concave NWI classification: PEM
_ Veg Type (Viereck Level 4 or other):
If no, explain. where HGM type:
umstances" present? Yes 🕌 No
answers here.
ea
? Yes <u>×</u> No
Remarks (e.g., marginal?):
an total >100%. Use 2012 indicator status.
Dominance Test worksheet:
Number of Dominant Species That are OBL, FACW, or FAC:(A)
Total Number of Dominant
Species Across All Strata: (B)
Percent of Dominant Species
That are OBL, FACW, or FAC: (A/B)
Prevalence Index worksheet:
Total % Cover of:Multiply by:
OBL species15
FACW species X2= X2=
FAC species
FACU species X4=/ 6
UPL + NL species X5=
Column Totals: 129 (A) 345 (B)
Prevalence Index = B/A = 2, 67
The Control of March
Hydrophytic Vegetation Indicators:
Dominance Test is>50%
Prevalence Index is ≤3.0
Morphological Adaptations ¹ (Provide supporting
data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation ¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must
be present unless disturbed or problematic.
Hydrophytic
Vegetation Yes No
I D
Present?

SOIL			Sampling Point #: <u>W5</u>
Profile Description: (Describe to the depth need	ed to document the indicator or confirm t	he absence of indicate	ors)
Depth Horizon <u>Soil Matrix</u>	Redox Features		α,α dip.
(in.) (opt.) Color (moist) %	Color (moist) % Type ¹	Loc² Texture	(pos/ Remarks neg) (or use comment number)
3-0 0,			
0-8 104511		<u>s</u> il	pos
8-17 7548314 20		sil	nec
2.575/2 90			
¹ Type: C = Concentration, D = Depletion, RM = R	· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators (check ones that apply, m	easure from top of mineral layers unle	ess otherwise noted)	to Table 1
Standard Indicators:	Indicators for Problematic Hydr	ic Soils³:	
Histosol or Histel (A1) (≥16°organic surface, sat'd during wet period of growing season)	Alaska Color Change⁴ (TA4		ne indicator of hydrophytic vegetation, e primary indicator of wetland
Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)	Alaska Alpine Swales (TA5)	hyd	frology, and an appropriate landscape sition must be present unless disturbed
Hydrogen Sulfide (A4) (within 12"of ground surface; @" in this pit	Alaska Redox with 2.5Y Hue		problematic. ve 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		
Alaska Redox (A14)	Supplement; explain in Rema	rks)	
Alaska Gleyed Pores (A15)			
Restrictive Layer (if present)	Drainage Class:		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Type:	Soil Map Unit Name:	Hydric Soil Pres	ent? Yes <u>X</u> No
1. Very dry soil			
2.			
3.			
HYDROLOGY			
Wetland Hydrology Indicators (check ones that a	apply, measure from soil surface):	Secondary Indicate	ors (at least 2 are required)
Primary Indicators (any one indicator is sufficient	1	Water-Stained	er a custa es empresas de estas facilitats
Surface Water (A1) Su	rface Soil Cracks (B6)	Drainage Patt	erns (B10)
High Water Table (A2) (w/in 12")	ndation Visible on Aerial Imagery (B7)		pheres on Living Roots (C3) (within 12")
	arsely Vegetated Concave Surface (B8)	Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")	
	rl Deposits (B15)	Salt Deposits	(1) は、 (1) は、 (2) は、 (2) は、 (3) は、 (4) は、
	drogen Sulfide Odor (C1) (w/in 12")		essed Plants (D1)
Drift Deposits (B3) Dr	r-Season Water Table (C2) (w/in 24")	<u></u> ✓ Geomorphic F	and the second of the second o
· · · · · · · · · · · · · · · · · · ·	ier (explain)		perch H2O w/in 12")
Iron Deposits (B5)		X FAC Neutral T	
		(# OBL+FACV	V dominants > # FACU+UPL dominants)
Field Observations (in. from ground surface):	»		
Surface Water Present? Yes No			
Water Table Present? Yes No Seeping in at the	Depth to water (in.)		
Saturation Present? Yes No >		Wetland Hydrolog	gy Present? Yes <u>~</u> No
(includes capillary fringe)	Epi Endo Unknown	Trouble in the control of	, , , , , , , , , , , , , , , , , , ,
Describe Recorded Data (stream gauge, monitorin		s), if available:	
•			
Remarks: Water must pend here during	breeke up.		
and the second of the second			
		新聞	7 - A 2



Site 115. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 115. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 115. Ambler Airport Improvements Wetland Investigation. Facing North. Taken September 10, 2012.



Site 115. Ambler Airport Improvements Wetland Investigation. Facing South. Taken September 10, 2012.

Appendix B

Observation Point Photographs September 6-10th, 2012



Site 1. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 1. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 2. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 2. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 5. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 5. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 6. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 6. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 9. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 9. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 10. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 10. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 11. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 11. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 14. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 14. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.



Site 15. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 15. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 16b. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 16b. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 18. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 18. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 20. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 20. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 21. Ambler Airport Improvements Wetland Investigation. Showing Bore hole. Taken September 7, 2012.



Site 23. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 23. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 25. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 25. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 26. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



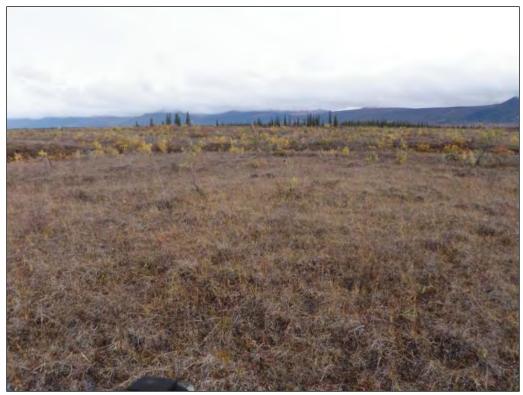
Site 26. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 27. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 27. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 28. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



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Site 30. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



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Site 31. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



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Site 32. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 32. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 34. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 34. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 35. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 35. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 36. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 36. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 37. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



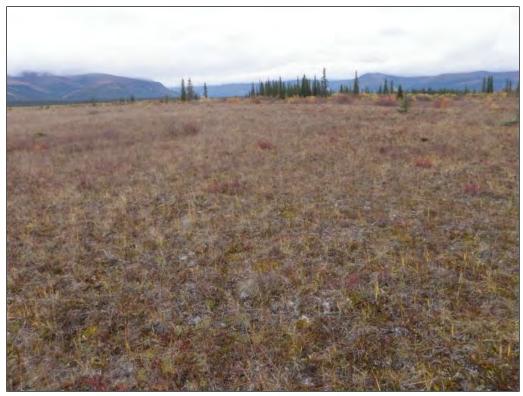
Site 37. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 38. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 38. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 39. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 39. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 40. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 40. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



Site 41. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 41. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 45. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 46. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 46. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 48. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 49. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 50. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 51. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 52. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 53. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 54. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 55. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 56. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 58. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 61. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 62. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 64. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 65. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 67. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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Site 68. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 68. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



Site 71. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.





Site 73. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 73. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



Site 74. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 75. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 77. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 79. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 80. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 81. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 82. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 83. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 86. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 87. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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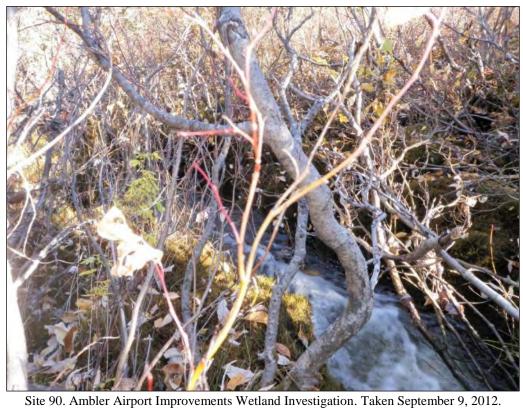
Site 89. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 90. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.





Site 91. Ambler Airport Improvements Wetland Investigation. Taken September 9, 2012.



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Site 94. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 97. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 98. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 100. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 101. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 102. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 103. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 104. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 105. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 105. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 106. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 106. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 110. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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Site 111. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 111. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 113. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 113. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 114. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



Site 114. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.