Ambler Airport Improvements Project

Ambler, Alaska

FINAL

JURISDICTIONAL DETERMINATION REPORT

February 2013

Prepared for:

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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:

Wetlands: "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.

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

Uplands: 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

2004 Data Form ID	*Wetland Status According to 1987 Manual*	Vegetation			Hydrology		Soils		*2007 Regional Supplement Confirms 1987 Manual Conclusion*
		Dominance Calculation (%)	*Prevalence Index*	*2007 Hydrophytic Vegetation Present*	*2007 Wetland Hydrology Indicators*	*2007 Wetland Hydrology Present*	*2007 Hydric Soil Indicators*	*2007 Hydric Soil Present*	
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	Y	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	Y	Alaska redox	Y	Wetland Status Confirmed

2004 Data Form ID	*Wetland Status According to 1987 Manual*	**Vegetation**			**Hydrology**		**Soils**		*2007 Regional Supplement Confirms 1987 Manual Conclusion*
		Dominance Calculation (%)	*Prevalence Index*	*2007 Hydrophytic Vegetation Present*	*2007 Wetland Hydrology Indicators*	*2007 Wetland Hydrology Present*	*2007 Hydric Soil Indicators*	*2007 Hydric Soil Present*	
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	Y	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).*

Inset 1. Black Spruce Forest/Scrub-Shrub Wetland

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 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.

Inset 3. Low Shrub/Sedge Wetland

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.

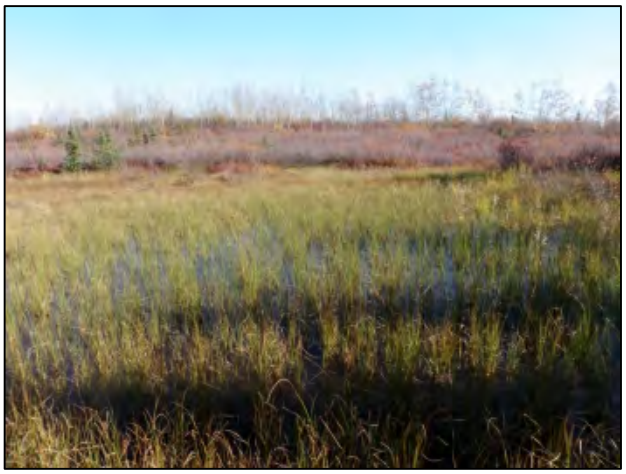
Inset 4. Willow Thicket Wetland

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.



Inset 6. Sedge Marsh Wetland

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, and crowberry.

Inset 7. Pond

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 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.

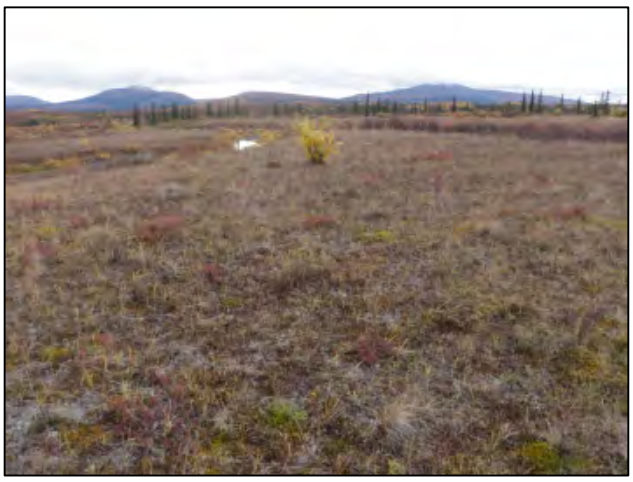
5.8 Uplands

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.

Inset 9. White Spruce Forest

Inset 10. White Spruce/Aspen Forest



Inset 11. Low Shrub Meadow Upland

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.

Table 8. Habitat Mapping Summary

Study Area	Habitat Type	NWI Codes	Acreage
Ambler Airport Improvements Area	Black Spruce Forest/Shrub Wetland	PFO4/SS1B, PFO4/SS4B	21.6
	Black Spruce Scrub/Shrub Wetland	PSS1/4B, PSS4/1B, PSS4B	11.5
	Low Shrub/Sedge Wetland	PSS1/EM1B, PSS1/EM1C	3.1
	Willow Thicket Wetland	PSS1C, PSS1F	7.0
	Graminoid Meadow Wetland	PEM1C	2.5
	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***
Ambler Airport Borrow Site and Access Corridor	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
	Willow Thicket Wetland	PSS1C	7.5
	Graminoid Meadow Wetland	PEM1C	0.6
	Sedge Marsh Wetland	PEM1F	6.5
	Pond	PUBH	0.2
	Stream	R3UBH	0.1
	Upland	U	128.9
		Ambler Airport Borrow Site and Access Corridor Area Subtotal	***170.1***
Alternative Access Corridor to the Ambler Airport Borrow Site	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
	Willow Thicket Wetland	PSS1C	1.1
	Graminoid Meadow Wetland	PEM1C	0.3
	Sedge Marsh Wetland	PEM1F	1.7
	Pond	PUBH	0.6
	Upland	U	52.0
		Alternative Access Corridor to the Ambler Airport Borrow Site Area Subtotal	***101.2***
Ambler River Material Site	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
	Graminoid Meadow Wetland	PEM1C	10.9
	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, PSS1C, PSS1/EM1C, PSS4/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

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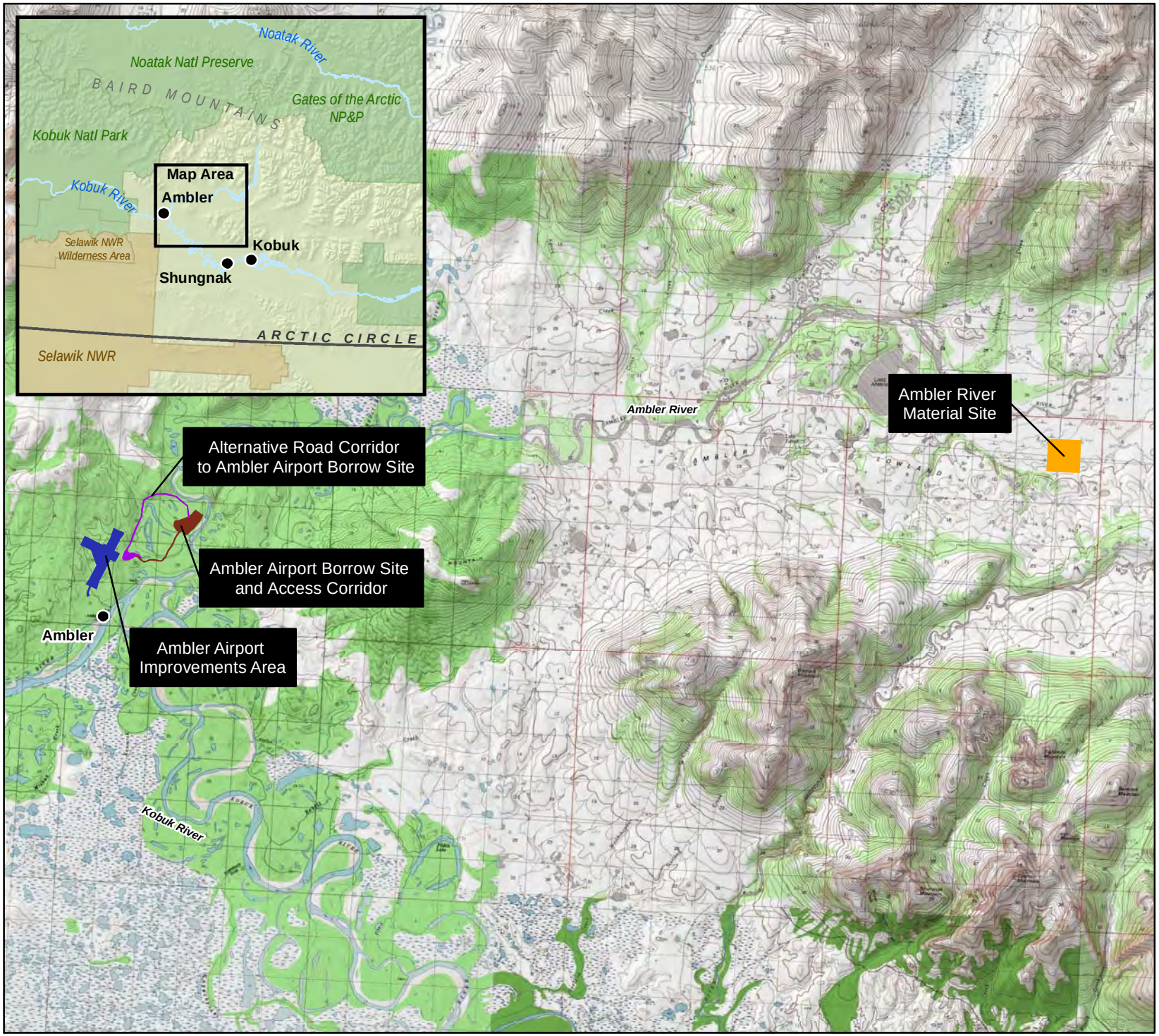


Ambler Airport Improvements

ADOT&PF Project No. 61303

Project Overview Figure 1

LEGEND

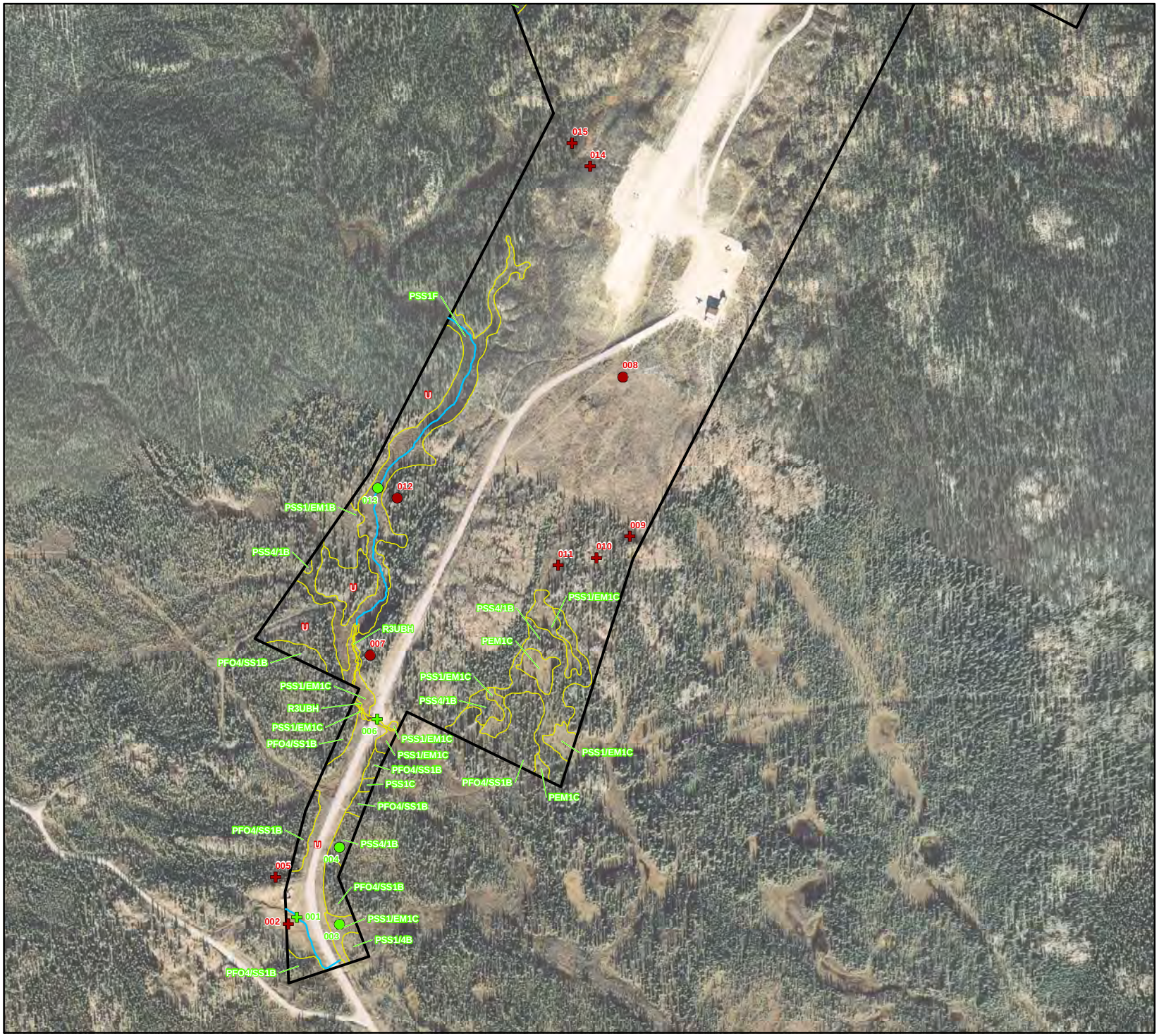
- Ambler Airport Improvements Area
- Ambler Airport Borrow Site and Access Corridor
- Alternative Road Corridor to Ambler Airport Borrow Site
- Ambler River Material Site

Miles

0 1.5 3

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Delineation Figure 2

LEGEND

- Study Area
- Wetland, Wetland Type, and Upland Boundary

Data Collection Sites

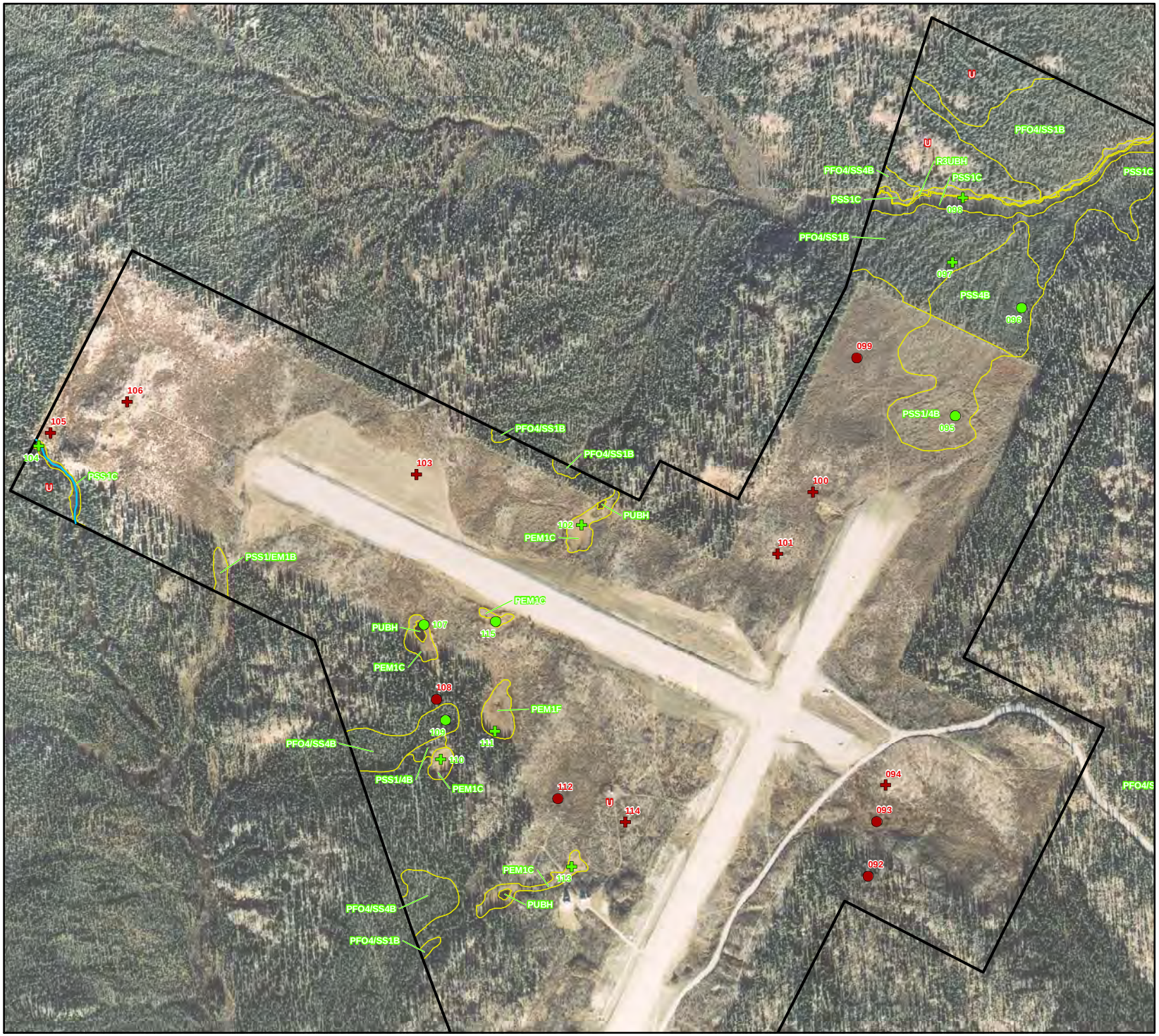
- Standard JD Form - Upland
- Observation Point - Upland
- Standard JD Form - Wetland
- Observation Point - Wetland or Waterbody
- 2004 Field Points (ABR 2005)
- Ambler Streams

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Delineation Figure 3

LEGEND

- Study Area
- Wetland, Wetland Type, and Upland Boundary

Data Collection Sites

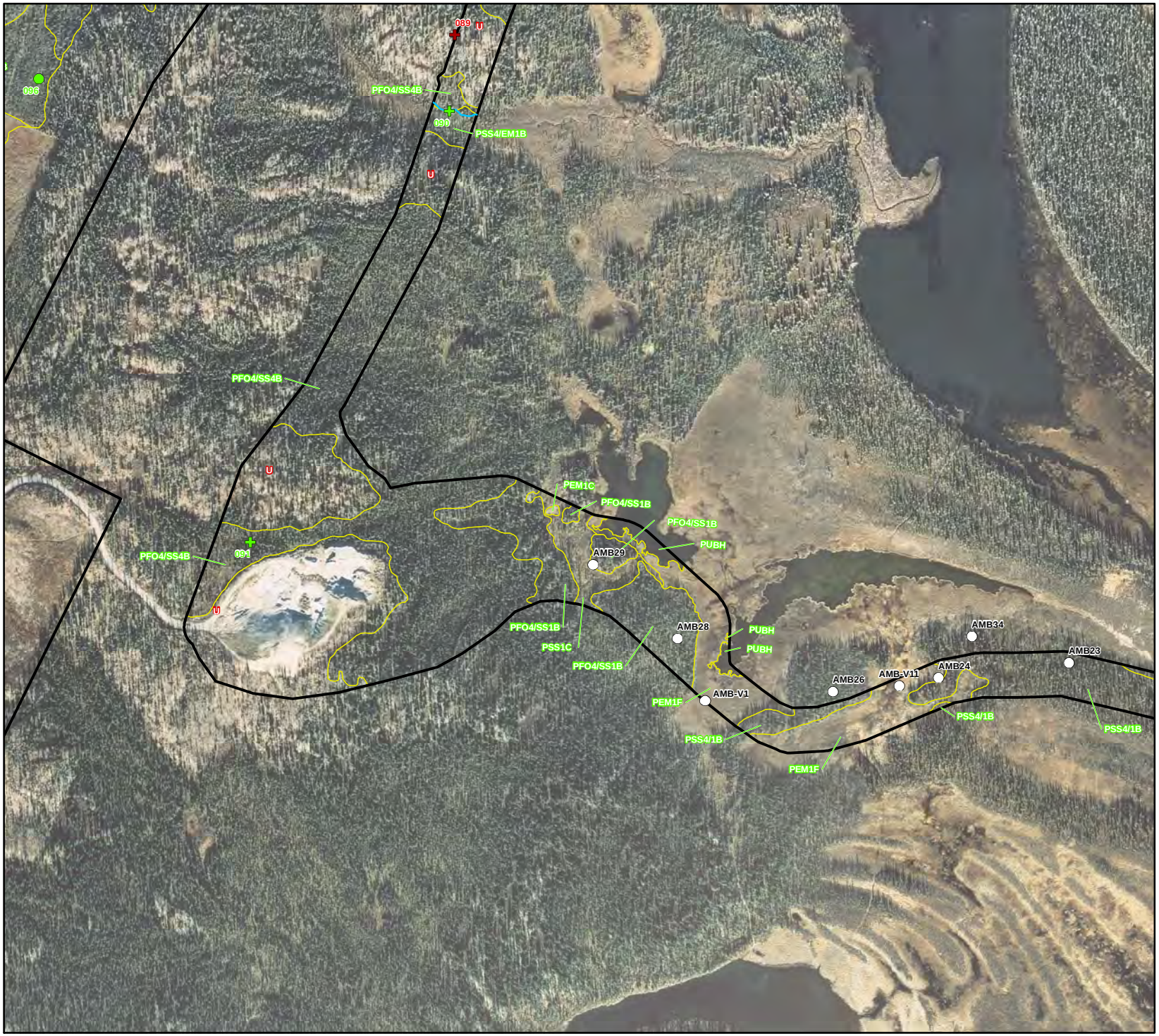
- Standard JD Form - Upland
- Observation Point - Upland
- Standard JD Form - Wetland
- Observation Point - Wetland or Waterbody
- 2004 Field Points (ABR 2005)
- Ambler Streams

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



Ambler Airport Improvements

ADOT&PF Project No. 61303

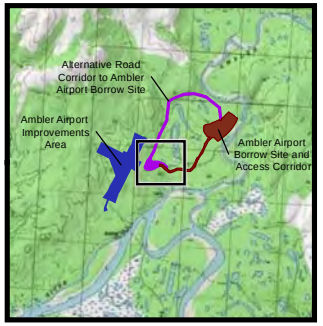
Wetland Delineation Figure 4

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
- 2004 Field Points (ABR 2005)
- Ambler Streams



Feet

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N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

ADOT&PF Project No. 61303

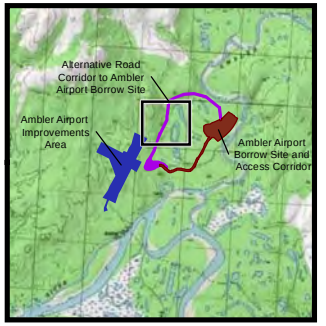
Wetland Delineation Figure 5

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
- 2004 Field Points (ABR 2005)
- Ambler Streams



Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Delineation Figure 6

LEGEND

- Study Area
- Wetland, Wetland Type, and Upland Boundary

Data Collection Sites

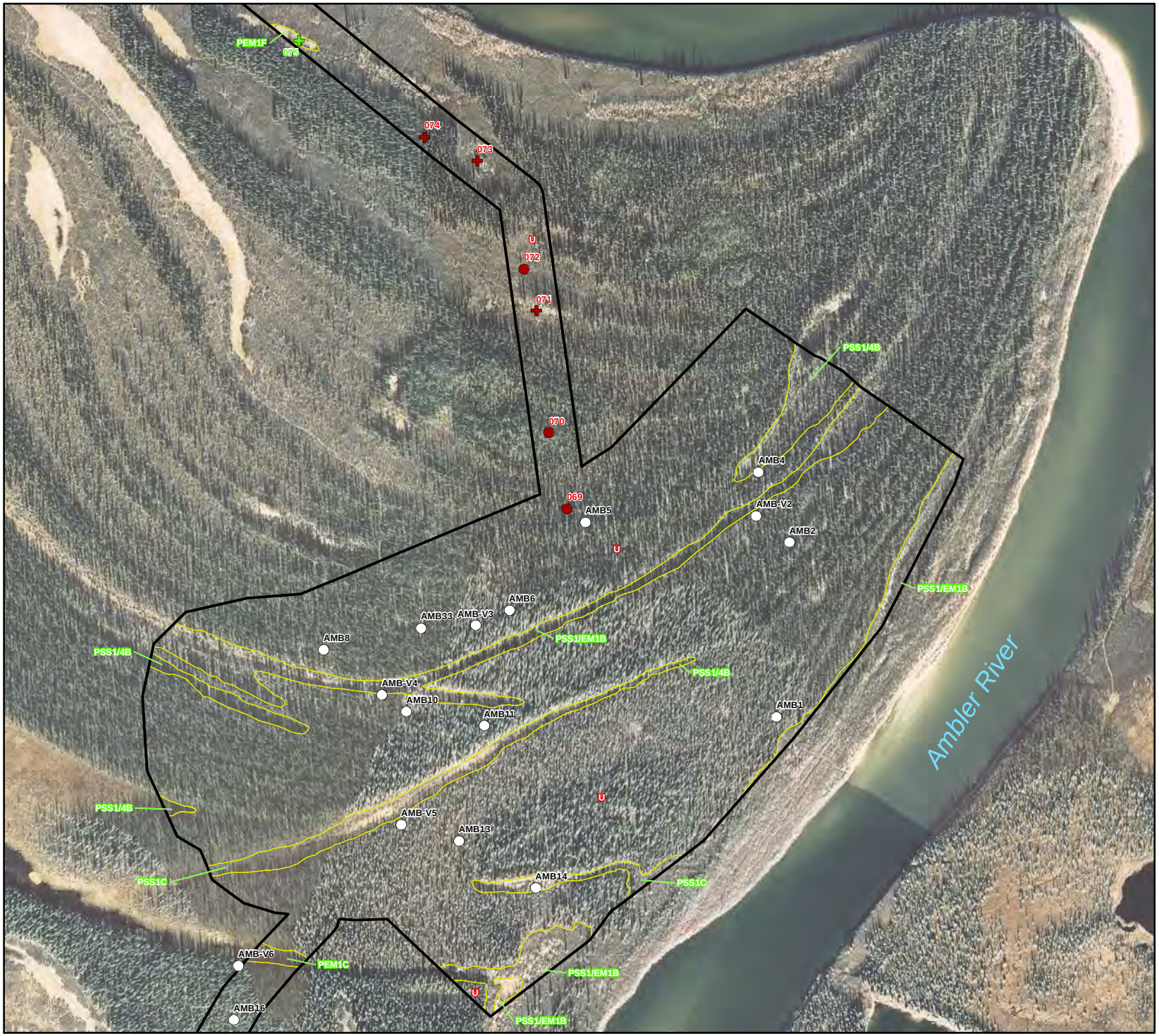
- Standard JD Form - Upland
- Observation Point - Upland
- Standard JD Form - Wetland
- Observation Point - Wetland or Waterbody
- 2004 Field Points (ABR 2005)
- Ambler Streams

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Delineation Figure 7

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
- 2004 Field Points (ABR 2005)
- Ambler Streams

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Delineation Figure 8

LEGEND

- Study Area
- Wetland, Wetland Type, and Upland Boundary

Data Collection Sites

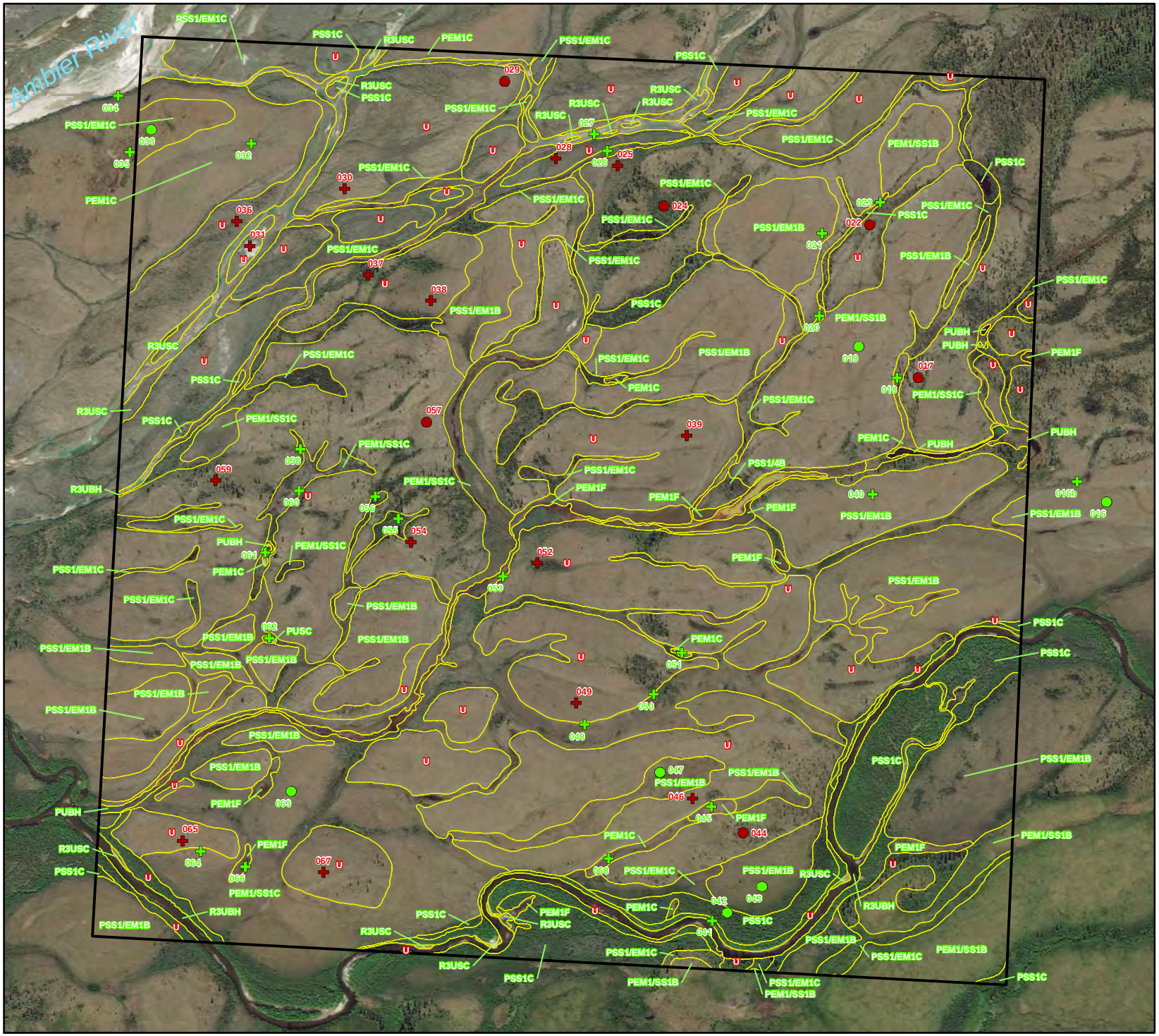
- Standard JD Form - Upland
- Observation Point - Upland
- Standard JD Form - Wetland
- Observation Point - Wetland or Waterbody
- 2004 Field Points (ABR 2005)
- Ambler Streams

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



Ambler Airport Improvements

ADOT&PF Project No. 61303

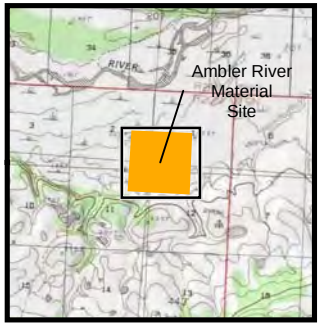
Wetland Delineation Figure 9

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
- 2004 Field Points (ABR 2005)
- Ambler Streams

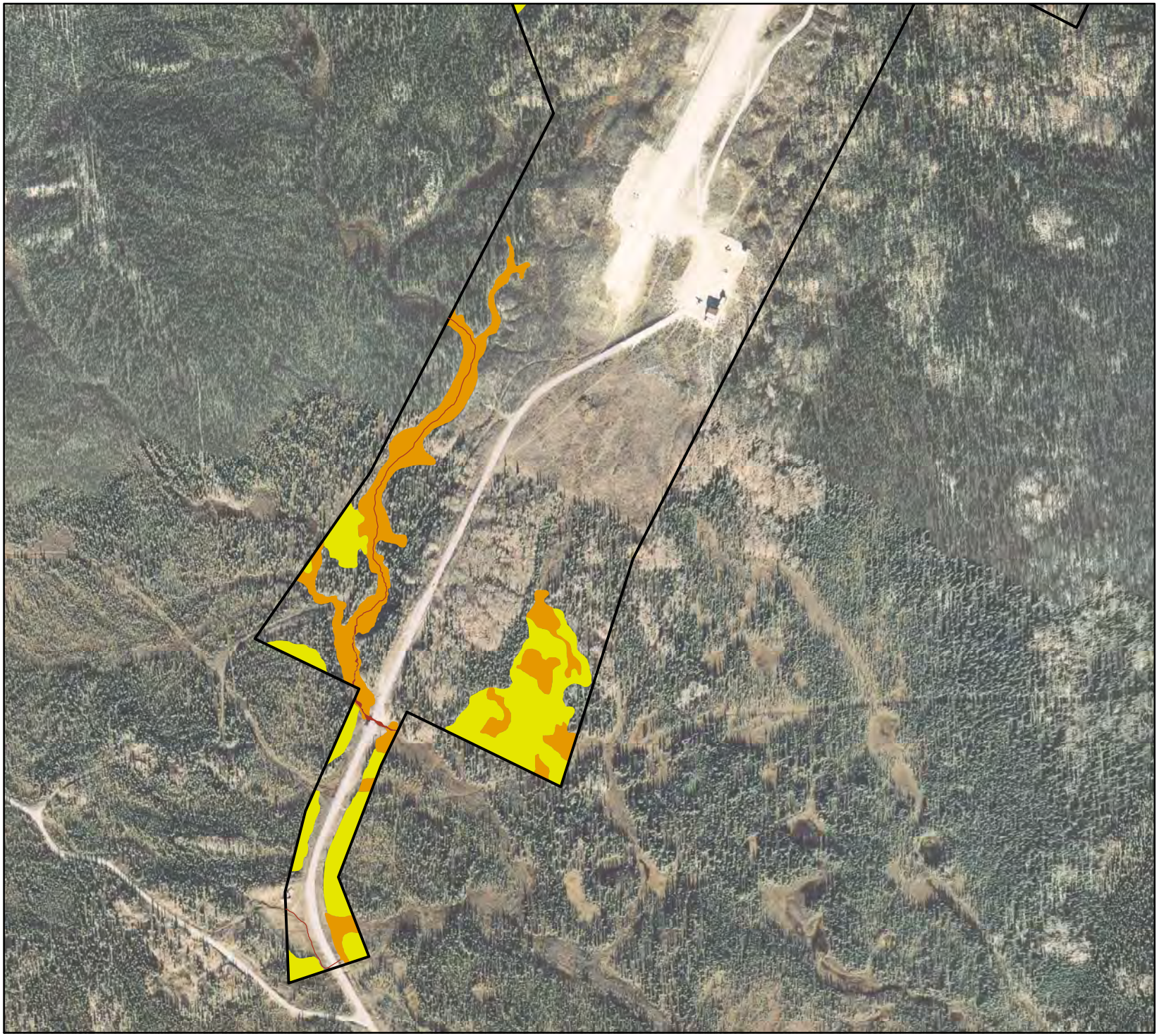


Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



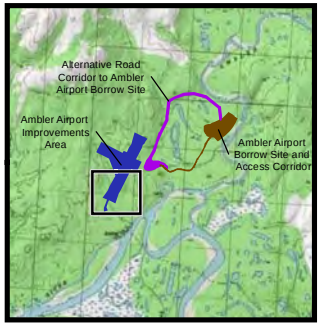
Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 10

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

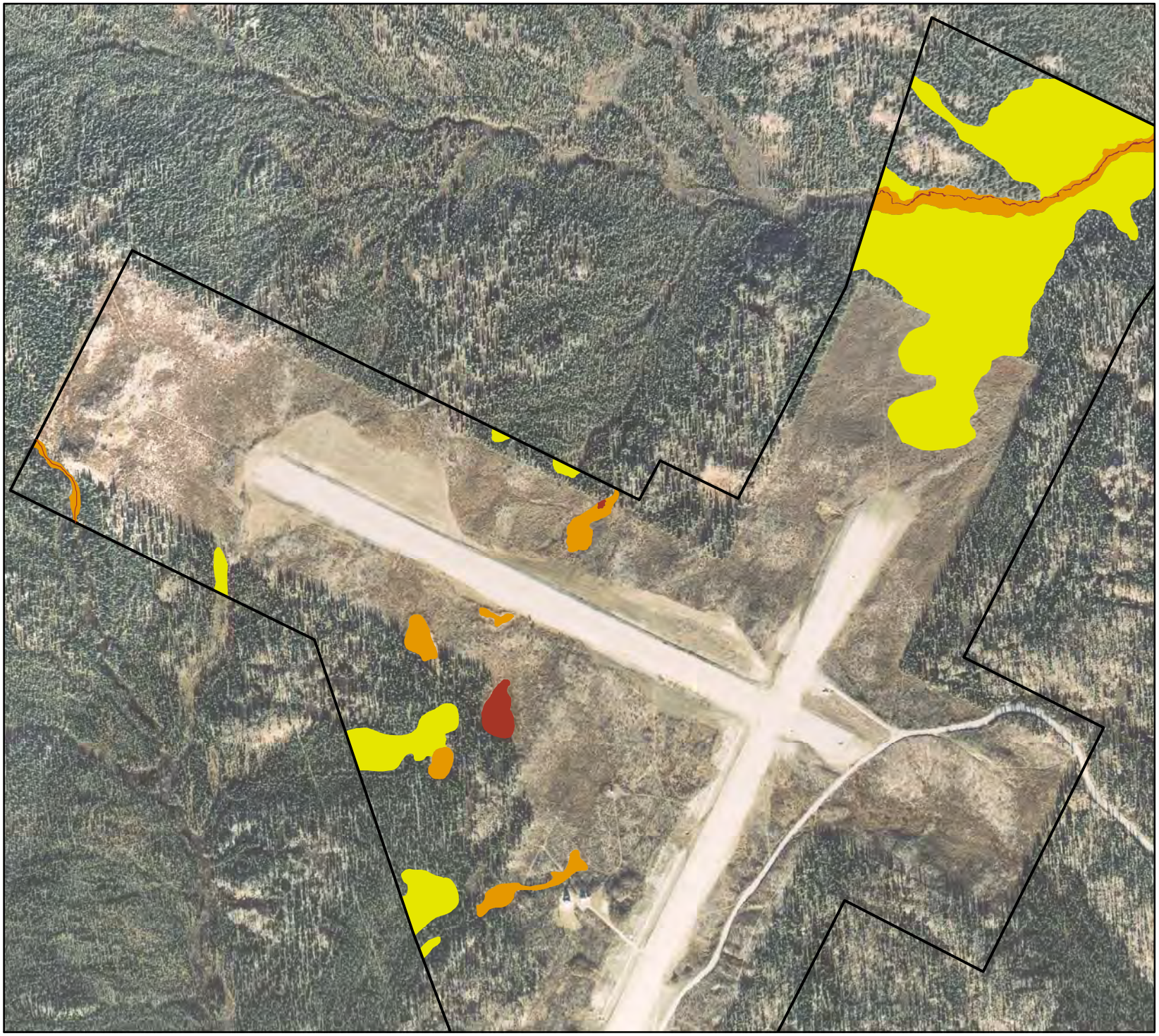
N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

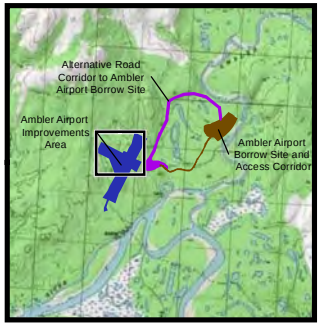
ADOT&PF Project No. 61303

Wetland Functional Classification Figure 11



LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

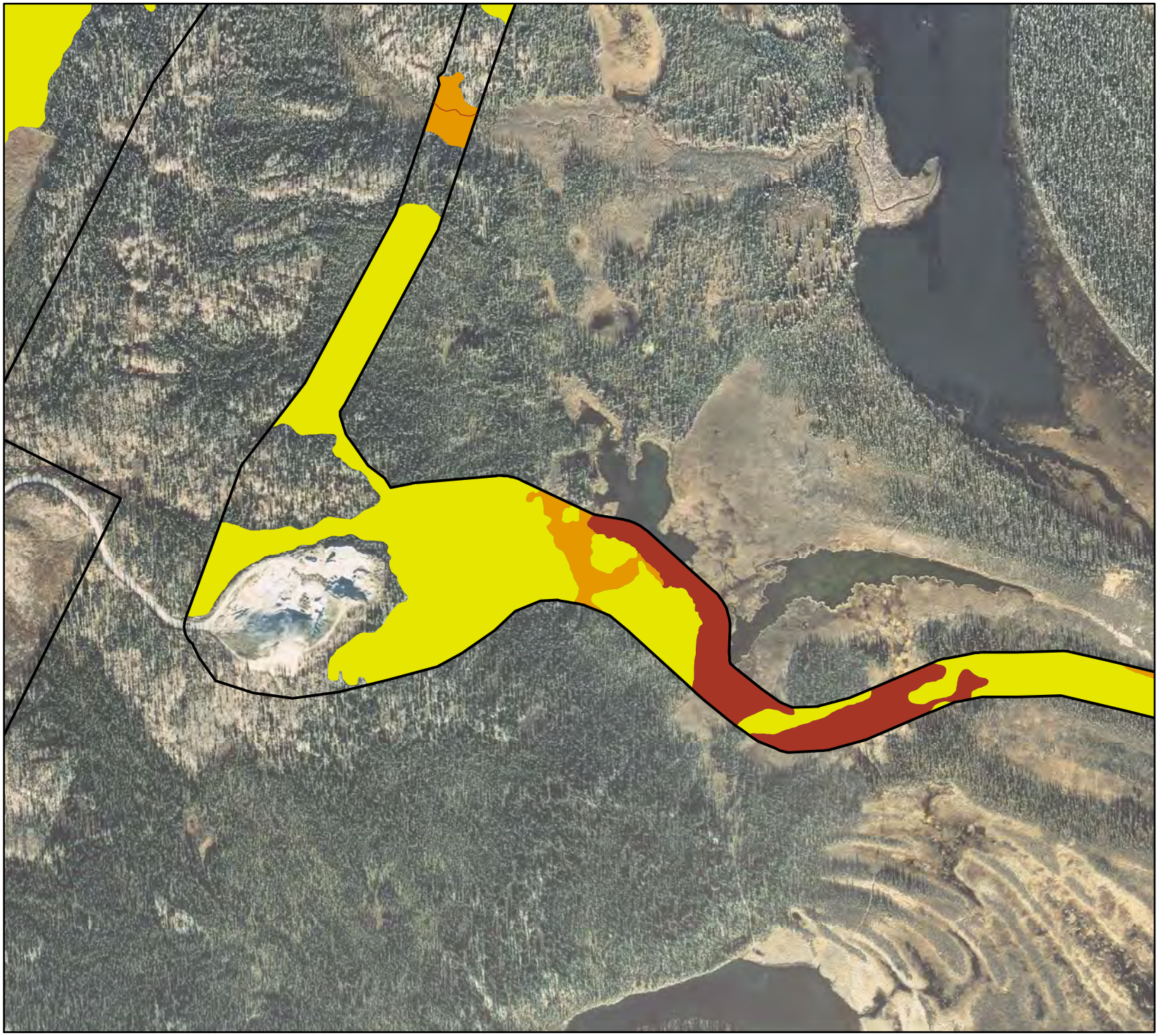
N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

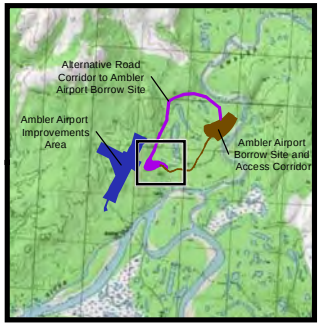
ADOT&PF Project No. 61303

Wetland Functional Classification Figure 12



LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

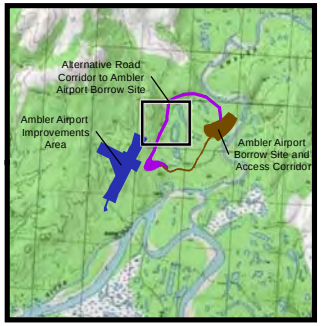
Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 13

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 14

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands

Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

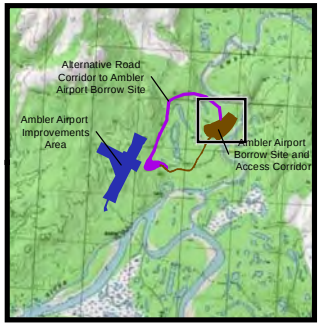
Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 15

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

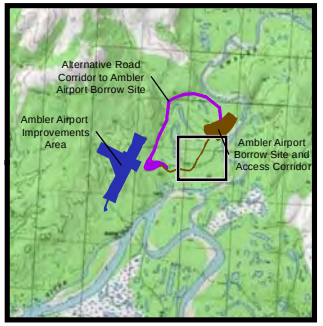
Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 16

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands

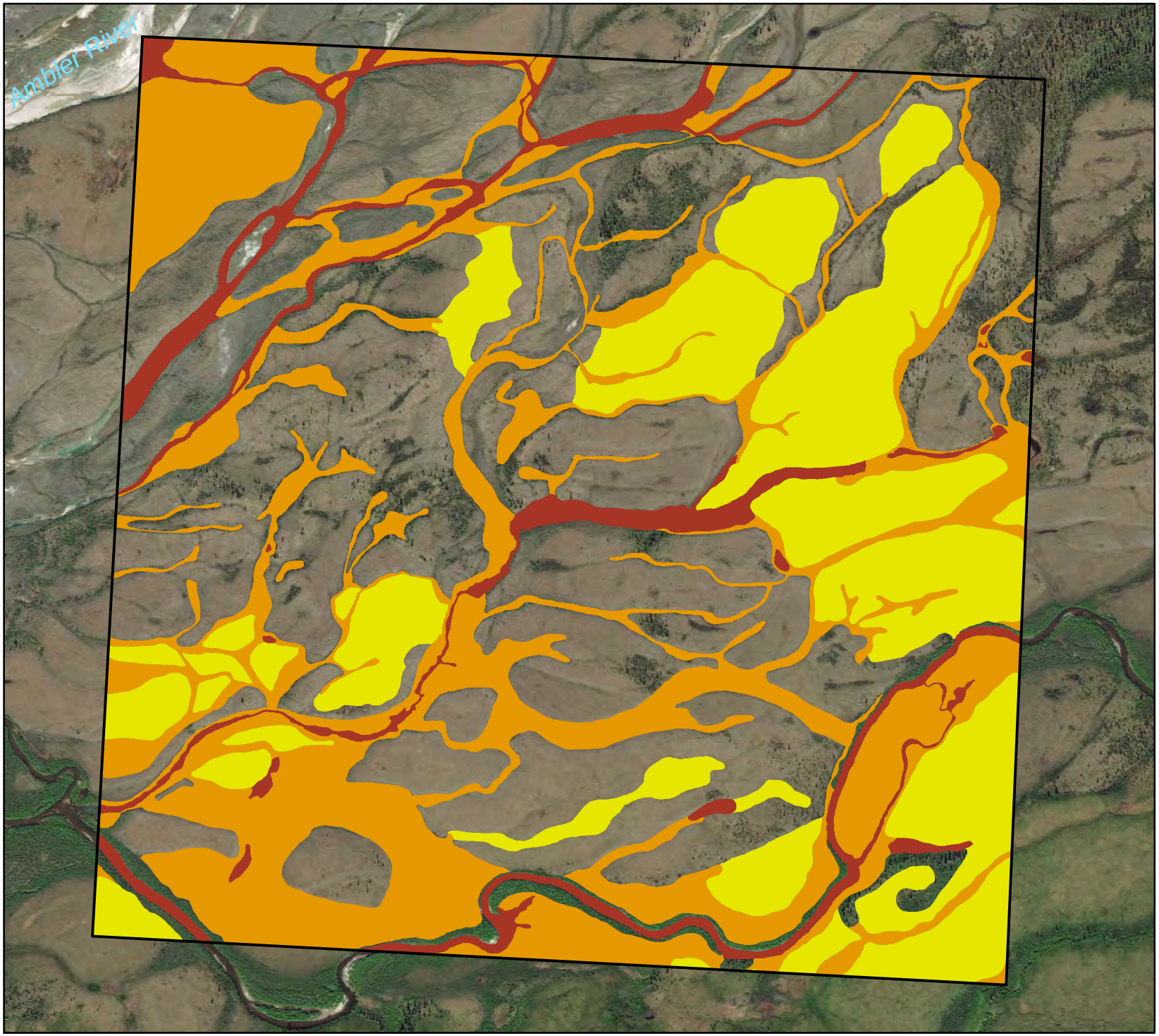


Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013



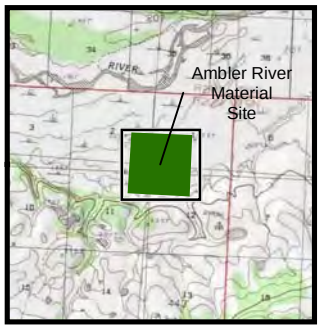
Ambler Airport Improvements

ADOT&PF Project No. 61303

Wetland Functional Classification Figure 17

LEGEND

- Study Area
- Category I Wetlands
- Category II Wetlands
- Category III Wetlands



Feet

0 250 500

N

Datum: NAD 1983
Projection: Albers
Sources: ESRI, DNR, ADOT&PF, HDR, GINA
Author: HDR Alaska, Inc.
Date: January 28, 2013

Appendix A

Wetland Determination Data Forms and Site Photographs

September 6-10th, 2012

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Airport Borough/City: NW Arctic Date: 9/6/12
Applicant/Owner: DOT Sampling Point #: 13
Investigator(s): Mac S, Jay J Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.092513 Long. -157.867522 ± ' NAD 83 Recorded on GPS #: ___ Marked on map? X Field Map #: X
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: flat Slope (%): 1-2 Aspect: E
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EM1C
Photo nos./descriptions: 86-87 soil 88-89 veg Camera #: ___ Veg Type (Viereck Level 4 or other): —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: X If no, explain. wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 3
50% of total cover: 1.5 20% of total cover: 0.6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet nan	10		FAC	7. Sal pet	1		FAC
2. Sal rich	50	X	FAC	8. Hrc rub	1		FACW
3. Pic glau	4		FACW	9. Sal pul	1		FAC
4. Pot fru	10		FAC	10.			
5. Alnu pst	1		FACW	11.			
6. Vac uli	3		FAC	12.			

Total Sapling/Shrub Cover: 81
50% of total cover: 40.5 20% of total cover: 16.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car aqu	30	X	OBL	12.			
2. Equ var	10		FACW	13.			
3. Car pot	20	X	OBL	14.			
4. Par kot	1		FACW	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 61
50% of total cover: 30.5 20% of total cover: 12.2
Circular 1/10-ac plot X or other plot dimension: ___ % of bare ground: —
% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes 90 %
(where applicable)

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	X1=	50
FACW species	13	X2=	26
FAC species	75	X3=	225
FACU species	7	X4=	28
UPL + NL species	—	X5=	—
Column Totals:	145 (A)		329 (B)

Prevalence Index = B/A = 2.27

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 Present? Yes X No ___

Remarks: Pic glau stunted and unhealthy looking

SOIL

Sampling Point #: 13

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
4-1	Moss									
1-0	A	Oe								
0-16	B	5YR 4/1		2.5YR 4/6	10	RM	RC	Sal	+	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- X Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name: —

Hydric Soil Present? Yes X No ___

Comments: positive rxn through B layer
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- X 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)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ___ Depth of water (in.) 3

Water Table Present? Yes X No ___ Depth to water (in.) 0

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

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

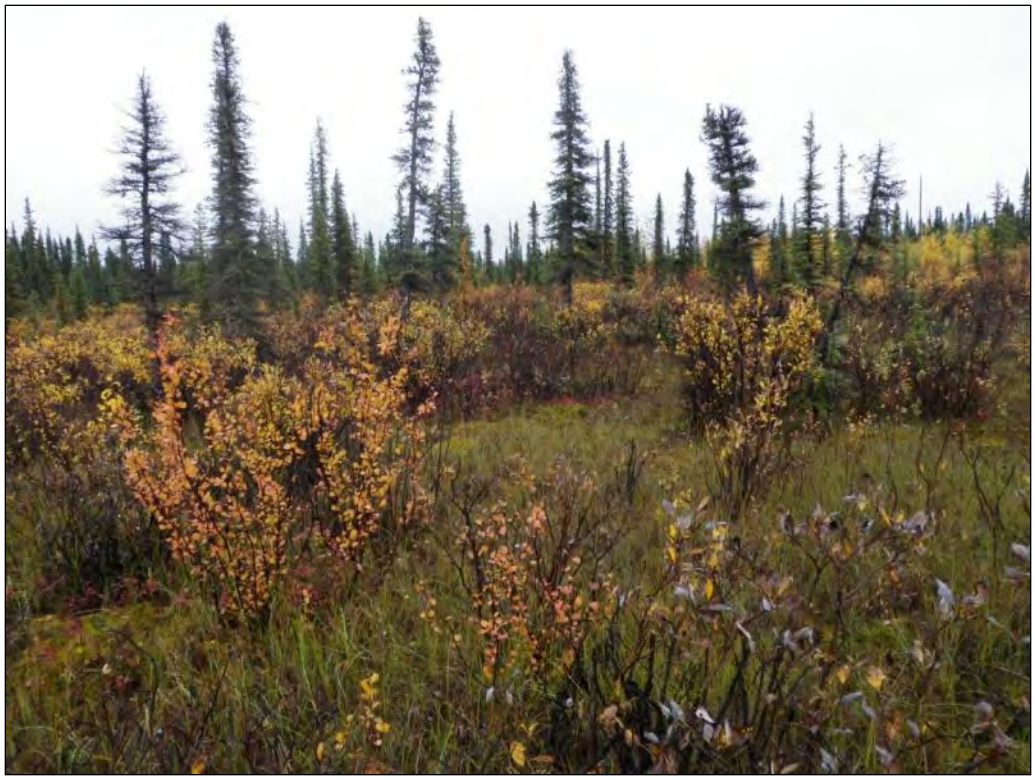
Wetland Hydrology Present? Yes X No ___

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

Remarks:

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: Date: 9/6/12
Applicant/Owner: DOT Sampling Point #: 4
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.09345 Long. 157.87676 ± ' NAD 83 Recorded on GPS #: Y Marked on map? X 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: PSS4/1B
Photo nos./descriptions: 90-91 -soil 92-93 veg Camera #: — Veg Type (Viereck Level 4 or other): —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: — No: X If no, explain. weather HGM type: slope
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.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 3
50% of total cover: 1.5 20% of total cover: 0.6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pic mar	20	X	FACW	7. Vacc oxy	1		OBL
2. Vacc vit	5		FAC	8. Emp nig	1		FAC
3. Led dec	4		FACW	9. Bet nan	5		FAC
4. Vacc uli	15	X	FAC	10. And pol	2		FACW
5. Sal pul	10		FAC	11.			
6. Ros aci	3		FACW	12.			

Total Sapling/Shrub Cover: 66
50% of total cover: 33 20% of total cover: 13.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Rub cha	5		FACW	12.			
2. Pur sec	2		FACW	13.			
3. Pot fri	1		FACW	14.			
4. Cal can	3		FAC	15.			
5. Equ sci	2		FACW	16.			
6. Car big	20	X	FAC	17.			
7. Car aqu	2		OBL	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 35
50% of total cover: 17.5 20% of total cover: 7

Circular 1/10-ac plot X or other plot dimension: ___ % of bare ground: 0
% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes ___%
(where applicable)

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	X1=	3
FACW species	35	X2=	70
FAC species	59	X3=	177
FACU species	7	X4=	28
UPL + NL species	—	X5=	—
Column Totals:	104 (A)		278 (B)

Prevalence Index = B/A = 2.67

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 Present? Yes X No ___

Remarks: Feather moss 70%
Sphagnum 10%

SOIL

Sampling Point #: 4

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/ neg)	Remarks (or use comment number)
16-0	O	O1								
0-4	B	5Y3/1		—				sal	+	patches of organics 20%

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)
- X 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 (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name: —

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes ___ No X Depth of water (in.) _____
Water Table Present? Yes X No ___ Depth to water (in.) 2
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

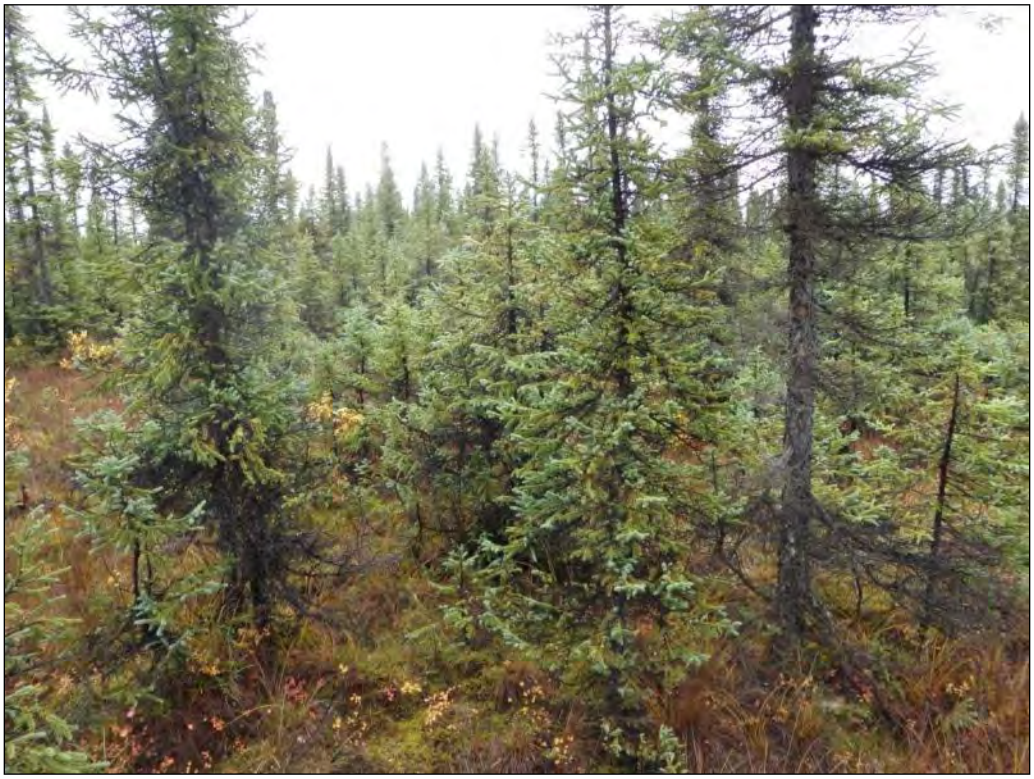
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Site 4. Ambler Airport Improvements Wetland Investigation. Facing South. 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

Project: Ambler Airport Borough/City: Northern Date: 9/6/12

Applicant/Owner: DOT Sampling Point #: 7

Investigator(s): Mac S Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.09583 Long. 157.86707 ± ' NAD 83 Recorded on GPS #: N Marked on map? X Field Map #:

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: hillslope Slope (%): 1 Aspect: W

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

Photo nos./descriptions: 97-99 soil 100-101 veg Camera #: ___ Veg Type (Viereck Level 4 or other): —

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

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic gla	20	X	FACU	5.			
2. Pop tram	10		FACU	6.			
3.				7.			
4.				8.			

Total Tree Cover: 30

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Vac ul	20	X	FAC	7. Pop tre	5		FACU
2. Sal rich	15	X	FACW	8. Led Dec	3		FACW
3. She can	2		FACU	9.			
4. Vac vit	15	X	FAC	10.			
5. Emp nig	10		FAC	11.			
6. Ari rub	1		FACW	12.			

Total Sapling/Shrub Cover: 71

50% of total cover: 35.5 20% of total cover: 14.2

Herb Stratum

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

Total Herb Cover: 15

50% of total cover: 7.5 20% of total cover: 3.0

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

% Cover of Wetland Bryophytes _____% Total Cover of Bryophytes 50 %
(where applicable)

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	19	X2=	38
FAC species	57	X3=	171
FACU species	37	X4=	148
UPL + NL species	3	X5=	15
Column Totals:	116 (A)		372 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%
No Prevalence Index is ≤3.0

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Trees 30-40' high

SOIL

Sampling Point #: 7

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
2-0	Moss									
0-3	A	10YR 2/2								high percentage of organics
3-8	B1	2.5Y 4/1	40	~~2.5Y 4/4~~				sil		
		7.5YR 4/4	60							
8-16	B2	10YR 3/3						sil		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: well drained
Depth (inches) none

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- X 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)
- X Iron Deposits (B5)
- X Surface Soil Cracks (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")
- X Other (explain)

Secondary Indicators (at least 2 are required)

- X 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)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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: Ambler Borough/City: Date: 9/6/12
Applicant/Owner: DOT Sampling Point #: 8
Investigator(s): Mw S., Jay J Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.09940 Long. 157.85971 ± ' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: —
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: hillside Slope (%): — Aspect: —
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
Photo nos./descriptions: 102-103 soil 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 X No —
Are Vegetation —, Soil —, or Hydrology — naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Disturbed willow/aspen

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 0

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pop trem	25	X	FACU	7. Vacc uli	15	—	FAC
2. Sal rot	25	X	FACW	8. Sal gla	2	—	FAC
3. Lon dec	10	—	FACW	9.			
4. Equ arv	7	—	FAC	10.			
5. Vacc vit	8	—	FAC	11.			
6. Pic glau	3	—	FACU	12.			

Total Sapling/Shrub Cover: 95

50% of total cover: 47.5 20% of total cover: 19

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car big	5	X	FAC	12.			
2. Chr ang	1	—	FACW	13.			
3. Grass sp	2	—	NL	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 8

50% of total cover: 4 20% of total cover: 1.6

Circular 1/10-ac plot — or other plot dimension: — % of bare ground: 30
% Cover of Wetland Bryophytes — % Total Cover of Bryophytes — %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 35	X2= 70
FAC species 37	X3= 111
FACU species 29	X4= 116
UPL + NL species 2	X5= 10
Column Totals: 103 (A)	307 (B)

Prevalence Index = B/A = 2.98

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 Present? Yes X No —

Remarks: Lichen (white) 5%

SOIL

Sampling Point #: 8

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
2-1	Litter									
1-0	Oi									
0-½	E	10YR5/1								
½-6	B1	10YR4/6	70%					sil		
		10YR6/1	30%							
6-9	B2	2.5Y5/1	50%	2.5Y5/4 *	50%			sil		*color is a matrix color not redox feature
9-18	B3	2.5Y5/3						sil		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ✓ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ✓ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ✓ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: None
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ___ No ✓

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

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

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

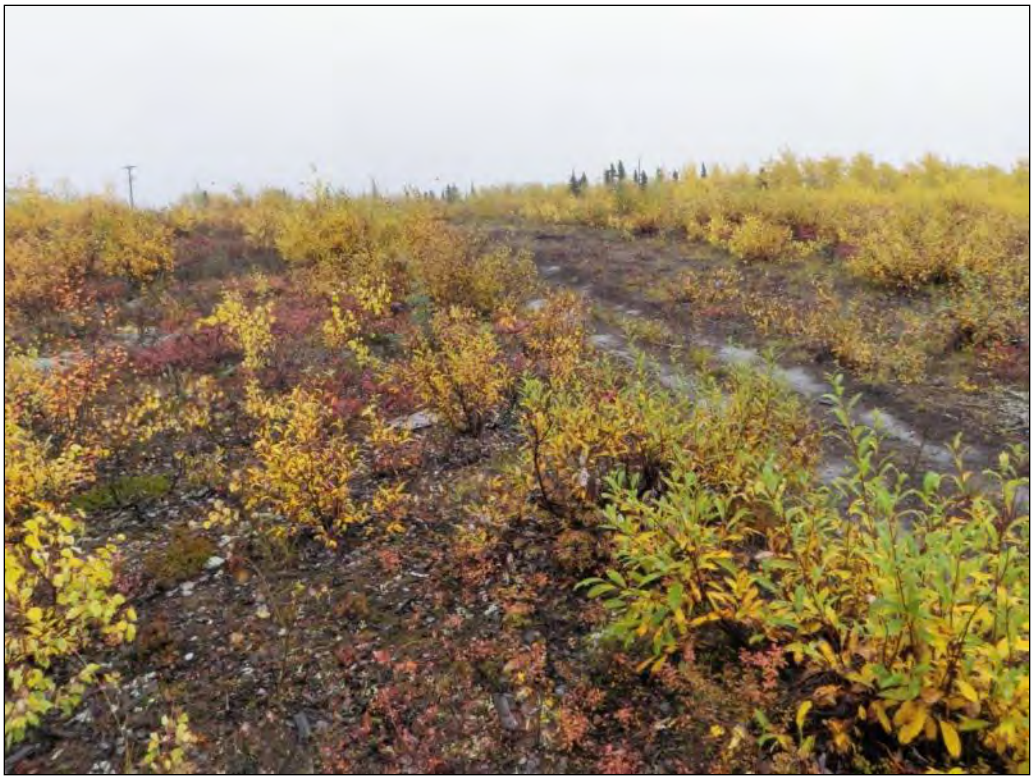
Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

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

Project: Ambler Airport Borough/City: NW Arctic Date: 9/6/12

Applicant/Owner: DOT Sampling Point #: 12

Investigator(s): Mac S Jay J Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.09776 Long. 157.8665 ±___' NAD 83 Recorded on GPS #: Y Marked on map? X Field Map #: ____

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: hillside Slope (%): 4 Aspect: S

Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: UpL1

Photo nos./descriptions: 112-113 soil 114-115 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. weather HGM type: ____

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

Are Vegetation N/A Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Open white spruce forest

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic glau	15	X	FACU	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 15

50% of total cover: 7.5 20% of total cover: 3.0

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Vacc vit	10		FAC	7. Emp nig	5		FAC
2. Vacc uli	55	X	FAC	8. Sal pul	2		FAC
3. Sal gla	20	X	FAC	9. Pic gla	5		FACU
4. Ros aci	5		FACU	10. Pot fru	1		FAC
5. Led des	10		FACW	11.			
6. Bet glan	45	X	FAC	12.			

Total Sapling/Shrub Cover: 158

50% of total cover: 79 20% of total cover: 31.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Cal can	10	X	FAC	12.			
2. Mer pan	2		UPL	13.			
3. Cor bin	5	X	FAC	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 17

50% of total cover: 8.5 20% of total cover: 3.4

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

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	10	X2=	20
FAC species	153	X3=	459
FACU species	25	X4=	100
UPL + NL species	2	X5=	10
Column Totals:	190 (A)		589 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%

No Prevalence Index is ≤3.0

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Feather Moss

SOIL

Sampling Point #: 12

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
6-0	Oi	—								
0-18	B	2.5Y5/1	80%	—	—	—	—	sil	—	negative α,α
		5YR3/4	20%							

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: None
Depth (inches) _____

Drainage Class: SWD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. negative alpha alpha
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch 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):

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

Water Table Present? Yes X No ____ Depth to water (in.) 16

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

Saturation Present? Yes X No ____ Depth to sat. (in.) 13
(includes capillary fringe). Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

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

Remarks: Plot is near wetland/upland border. Water level is extremely high

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: Ambler AIP Borough/City: Date: 9/6/12

Applicant/Owner: DOT Sampling Point #: 13

Investigator(s): Mac S, Jan S Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.09788 Long. 157.86705 ± ' NAD 83 Recorded on GPS #: Y Marked on map? X Field Map #: Y

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: valley bottom Slope (%): 1-2 Aspect: S

Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1E

Photo nos./descriptions: 116-117 veg 118-119 hydro 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: Riverine

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Willow Thicket

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover:

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal rich	90	X	FACW	7.			
2. Bet glan	5		FAC	8.			
3.				9.			
4.				10.			
5.				11.			
6.				12.			

Total Sapling/Shrub Cover: 95

50% of total cover: 47.5 20% of total cover: 19

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car aqu	40	X	OBL	12.			
2. Car rot	20	X	OBL	13.			
3. Pur pal	81		FACW	14.			
4. Pot pal	5		OBL	15.			
5. Pur gram	2		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 68

50% of total cover: 34 20% of total cover: 13.6

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

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	X1=	25
FACW species	91	X2=	182
FAC species	7	X3=	21
FACU species	–	X4=	–
UPL + NL species	–	X5=	–
Column Totals:	123 (A)		228 (B)

Prevalence Index = B/A = 1.85

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 Present? Yes X No

Remarks: Water 70% Entire area inundated.

SOIL

Sampling Point #: 13

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/ neg)	Remarks (or use comment number)

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1. No soil pit dug due to inundation
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ___ Depth of water (in.) 12

Water Table Present? Yes X No ___ Depth to water (in.) 0

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: Entire valley bottom flooded w/ stream running through.

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: Ambler Mt. Site Borough/City: NW Arctic Date: 9/7/12
Applicant/Owner: DOT Sampling Point #: 16
Investigator(s): Mac S., Dan J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.15688 Long. 157.01924 ±___' NAD 83 Recorded on GPS #: D Marked on map? X Field Map #: X
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: terrace Slope (%): — Aspect: —
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSSI/EMIB
Photo nos./descriptions: 125-126 Veg 127-128 Soil 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: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil ___, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

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

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Rho lap	15	X	FAC	7. Pot fru	2	FAC	
2. Dry int	10		FACU	8. Pic glau	2	FACU	
3. Sal arc	5		FAC	9.			
4. Vacc ul	20	X	FAC	10.			
5. Sal ret	7		FAC	11.			
6. Emp nig	5		FAC	12.			

Total Sapling/Shrub Cover: 66
50% of total cover: 33 20% of total cover: 13.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Ped sud	1		FACW	12.			
2. Pot pus	2		FAC	13.			
3. Car scir	10	X	FACU	14.			
4. Fest alt	3		FAC	15.			
5. Car rot	1		OBL	16.			
6. Junc tri	1		FACW	17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 18
50% of total cover: 9 20% of total cover: 3.6
Circular 1/10-ac plot X or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes — % Total Cover of Bryophytes 50 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	X1=	1
FACW species	2	X2=	4
FAC species	59 ~~54~~	X3=	162177
FACU species	22 ~~27~~	X4=	10888
UPL + NL species	—	X5=	—
Column Totals:	84 (A)		270 ~~275~~ (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

X Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Most plants dead
Lichen 15%

SOIL

Sampling Point #: 16

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	O;									
0-2	A	10YR4/2						Sal		
2-5	B1	2.5Y4/2	90					Sal		
		2.5Y5/1	10							
5-9	B2	3N/1	80	7.5YR4/4	20	RMF	RC	sil	—	
9-16	B3	2.5Y4/2	85					Sal		
		10YR5/1	15							

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

___ 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)

___ Alaska Gleyed (A13)

X Alaska Redox (A14)

___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change[4] (TA4)

___ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes X No ____

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

___ Water-Stained Leaves (B9)
___ Drainage Patterns (B10) _____
___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3) (w/in 24", can perch 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):
Surface Water Present? Yes ____ No ____ Depth of water (in.) _____
Water Table Present? Yes X No ____ Depth to water (in.) 13
Seeping in at that depth but not yet filled?: ____
Saturation Present? Yes X No ____ Depth to sat. (in.) 7
(includes capillary fringe) Epi Endo Unknown

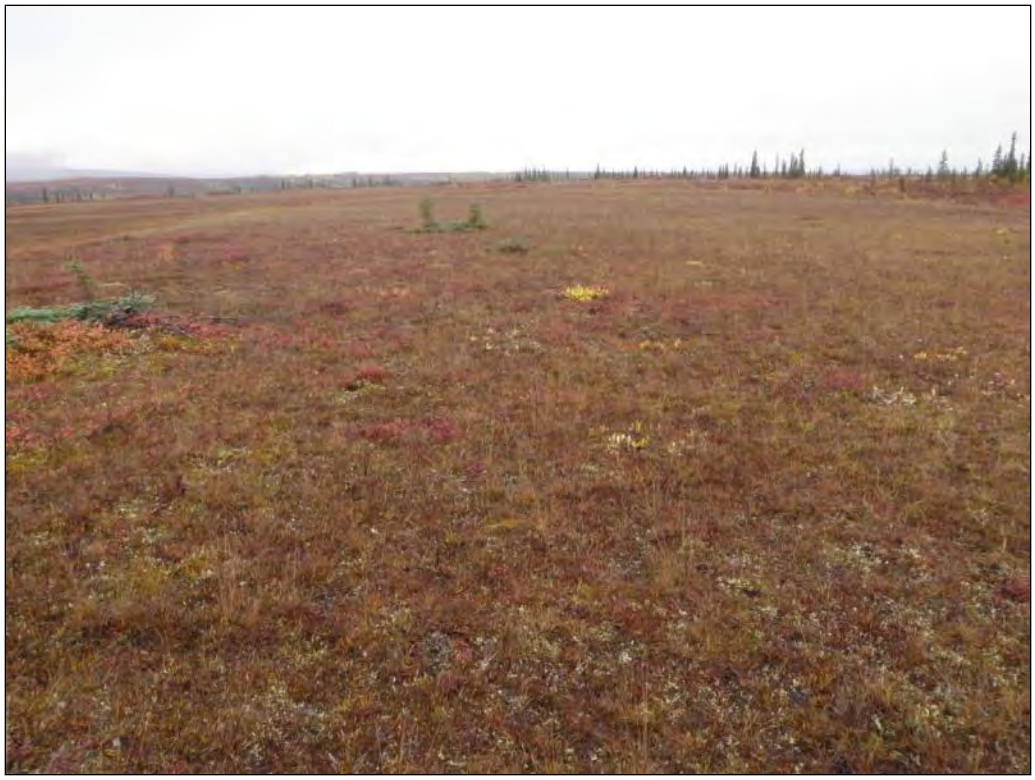
Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Project: Ambler MS Borough/City: Arctic NW Date: 9/7/17
Applicant/Owner: DOT Sampling Point #: 19
Investigator(s): MS, JJ Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.158730 Long. 157.02529 ± ' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: terrace Slope (%): 5 Aspect: —
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification:
Photo nos./descriptions: 131-132 133-134 Camera #: Veg Type (Viereck Level 4 or other): Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: ___ No: ___ If no, explain. wetter HGM type:
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

AMBSS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 3
50% of total cover: 1.5 20% of total cover: 0.6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pot fru	20	X	FAC	7. Vacc uli	8		FAC
2. Rho lapp	5		FAC	8. Pic gla	10		FACU
3. Dry int	20	X	FACU	9. Betnan	25	X	FAC
4. Sal ret	8		FAC	10. Sal ala	3		FAC
5. Sal pul	2		FAC	11.			
6. Sal arct	3		FAC	12.			

Total Sapling/Shrub Cover: 104
50% of total cover: 52 20% of total cover: 20.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car sci	15	X	FACU	12.			
2. Festu alt.	3		FAC	13.			
3. Tot ans	2		FAC	14.			
4. Hed alp	2		FACU	15.			
5. Min arc	2		UPL	16.			
6. Equ arv	1		FAC	17.			
7. Cor bla	5	X	FAC	18.			
8. Ped sud	1		FACW	19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 31
50% of total cover: 15.5 20% of total cover: 6.2

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	1	X2=	2
FAC species	85	X3=	255
FACU species	50	X4=	200
UPL + NL species	2	X5=	10
Column Totals:	138 (A)		467 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

No Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point #: 17

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
~~0-2~~	~~O~~									
~~0-2~~										
~~0-0~~										
2-0	O									
0-2	A	10YR3/1							—	reactive α/α
2-14	B1	10YR4/2	95					sil	—	
		10YR4/4	5							
14-17	B2	5Y5/1	80	5YR3/4	20	RMF	Matrix	sil	—	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

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

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler MS Borough/City: NW Arctic Date: 9/7/17
Applicant/Owner: DOT Sampling Point #: ~~18~~ 19
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.15865 Long. 157.02718 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: —
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: terrace Slope (%): — Aspect: —
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EMB
Photo nos./descriptions: 137-138 soil 139-140 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: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 0
50% of total cover: ___ 20% of total cover: ___

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pot fru	5		FAC	7. Dry int	15	X	FACU
2. Pic gla	7		FACU	8. Empnig	1		FAC
3. Pho lap	3		FAC	9. Betnan	5		FAC
4. Sal arc	10	X	FAC	10.			
5. Sal ret	2		FAC	11.			
6. Vac uli	10	X	FAC	12.			

Total Sapling/Shrub Cover: 58
50% of total cover: 29 20% of total cover: 11.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Jun tri	4		FACW	2.			
2. Tof pus	2		FAC	13.			
3. Car sch	25	X	FACW	14.			
4. Bet nan	3		FACW	15.			
5. Car micro	1		FAC	16.			
6. Arc rub	1		FACW	17.			
7. Grass sp	5		NI	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 41
50% of total cover: 20.5 20% of total cover: 8.2

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 50 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		X1=	
FACW species	8	X2=	16
FAC species	39	X3=	117
FACU species	47	X4=	188
UPL + NL species	5	X5=	25
Column Totals:	99 (A)		346 (B)

Prevalence Index = B/A = 3.49

Hydrophytic Vegetation Indicators:

No Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X* Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ~~X~~

Remarks: Lichen. * Strong indicators of hydric soil and hydrology. Vegetation is marginal based on Dominance test. Dry int. is common in the material site areas in both uplands and wetlands.

SOIL

Sampling Point #: 19

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
1-0	O									
0-2	A	10YR3/2								
2-19	B	10YR5/1	85	10YR5/6	15	RMF	PC	sa	-	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- X Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)	Drainage Class:	
Type: _____	Soil Map Unit Name:	**Hydric Soil Present?** Yes X No ___
Depth (inches) _____		

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- X 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)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ___ Depth **of** water (in.) 2

Water Table Present? Yes X No ___ Depth **to** water (in.) 9

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

Saturation Present? Yes X No ___ Depth **to** sat. (in.) 0

(includes capillary fringe) Epi Endo Unknown

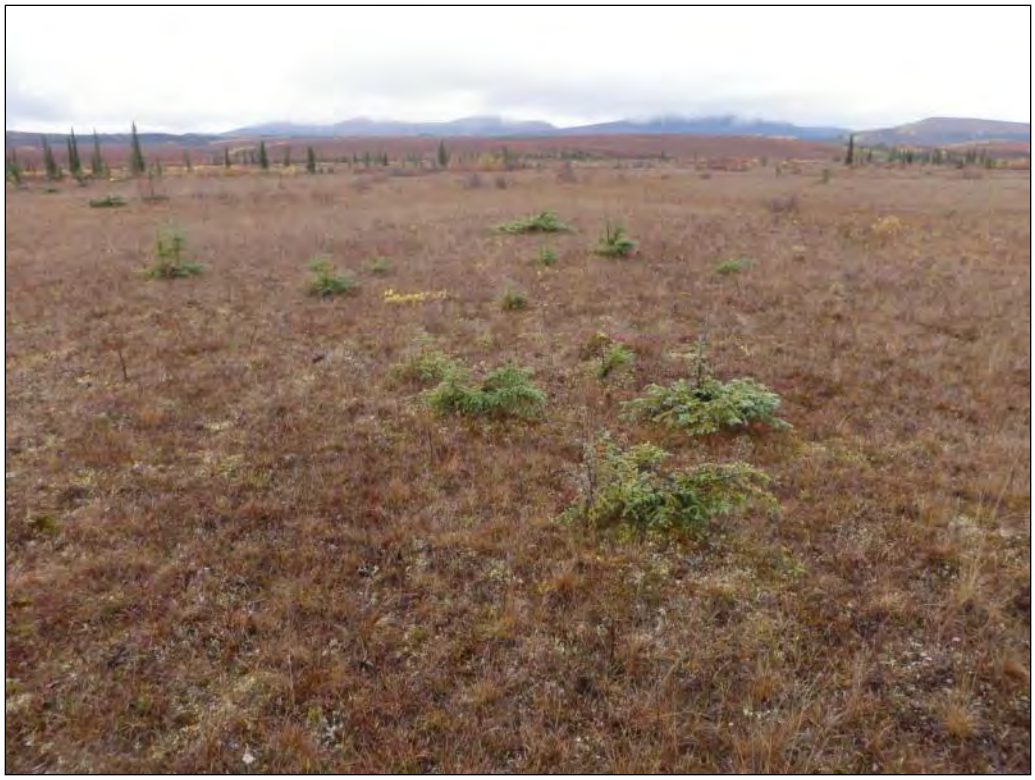
Wetland Hydrology Present? Yes X No ___

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

Remarks: Material test pit nearby show water table at 4 inches. In our pit 9"

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler MS Borough/City: Arctic NW Date: 9/7/12
Applicant/Owner: DOT Sampling Point #: 22
Investigator(s): Mac S., Jen J Firm: 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 Landform: terrace Slope (%): ___ Aspect: ___
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
Photo nos./descriptions: 144-147 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: ___ If no, explain. HGM type: ___
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 3
50% of total cover: 1.5 20% of total cover: 0.6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal glau	5		FAC	7. Rho lapp	1		FAC
2. Pic glau	5		FACU	8.			
3. Vac uli	15		FAC	9.			
4. Dry int	15		FACU	10.			
5. Bet nan	25	X	FAC	11.			
6. Pot Fru	50	X	FAC	12.			

Total Sapling/Shrub Cover: 116
50% of total cover: 58 20% of total cover: 23.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. San ang	2		FAC	12.			
2. Car sca	10	X	FACU	13.			
3. Car mic	10	X	FAC	14.			
4. Aga sca	2		FAC	15.			
5. Arc rub	1		FACW	16.			
6. Ped sud	1		FACW	17.			
7. Min arc	1		UPL	18.			
8. Gal bor	1		FACU	19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 28
50% of total cover: 14 20% of total cover: 3.6

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	2	X2=	4
FAC species	110	X3=	330
FACU species	34	X4=	136
UPL + NL species	1	X5=	5
Column Totals:	147 (A)		475 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Feather moss
Bet nan is ~4' tall

SOIL

Sampling Point #: 22

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
1-0	O									
0-2	A									
2-6	B	2.5Y4/1	90	5YR4/6	10	RMF	PC	sal	neg	
6-20	C	10YR5/2						sand	neg	2

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name: —

Hydric Soil Present? Yes ____ No X

Comments:
1. well drained sand
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch 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):
Surface Water Present? Yes ____ No X Depth of water (in.) _____
Water Table Present? Yes ____ No X Depth to water (in.) _____
Seeping in at that depth but not yet filled?: ____
Saturation Present? Yes ____ No X Depth to sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler MS Borough/City: NW Arctic Date: 9/7/12
Applicant/Owner: DOT Sampling Point #: 24
Investigator(s): MS, JJ Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.16026 Long. 157.03345 ± ' NAD 83 Recorded on GPS #: N Marked on map? Y Field Map #: AMB21
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: Upland
Photo nos./descriptions: 150-153 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: ___ If no, explain. HGM type: —
Are Vegetation N, Soil N, or Hydrology N 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

Tall shrub birch

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 2
50% of total cover: 1 20% of total cover: 0.4

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Betglan	85	X	FAC	7. Arc rub	5		FACW
2. Das int	15		FACU	8. Sal rich	2		FACW
3. Vac uli	25	X	FAC	9. Pic gla	5		FACU
4. Pot fru	20		FAC	10.			
5. Sal ret	5		FAC	11.			
6. Sal ala	5		FAC	12.			

Total Sapling/Shrub Cover: 167
50% of total cover: 83.5 20% of total cover: 33.4

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Fes alt	15	X	FAC	12.			
2. Car sca	25	X	FACU	13.			
3. Min arc	3		UPL	14.			
4. Gal bor	2		FACU	15.			
5. Hed alp	3		FACU	16.			
6. San ang	5		FAC	17.			
7. Bis plu	1		FACU	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 54
50% of total cover: 27 20% of total cover: 10.8

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	7	X2=	14
FAC species	160	X3=	480
FACU species	53	X4=	212
UPL + NL species	3	X5=	15
Column Totals:	223 (A)		721 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Feather Moss

SOIL

Sampling Point #: 24

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
1-0	Oi									
0-2	A	10YR3/2								
2-10	B	10YR5/1	90	5YR3/4	10	RMF	RC	Sand	neg	
10-20	C	Variegated						Sand	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- [N] Histosol or Histel (A1) (≥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)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [ ] Alaska Color Change[4] (TA4)
- [ ] 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)

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

Restrictive Layer (if present)
Type: None
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes _____ No X

Comments:
1. well drained sandy soil
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- [N] Water-Stained Leaves (B9)
- [ ] Drainage Patterns (B10) _____
- [ ] Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- [ ] Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3) (w/in 24", can perch 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):
Surface Water Present? Yes ____ No X Depth **of** water (in.) _____
Water Table Present? Yes ____ No X Depth **to** water (in.) _____
Seeping in at that depth but not yet filled?: ____
Saturation Present? Yes ____ No X Depth **to** sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Material Site Borough/City: Arctic NW Date: 9/7/12
Applicant/Owner: DOT Sampling Point #: 29
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.16169 Long. 157.03859 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y 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: Upland
Photo nos./descriptions: 160-161 - soil 162-163 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 N, Soil N, or Hydrology N 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

Open willow/graminoid meadow

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Dry int	20	X	FACW	7. Vac uli	6		FAC
2. Sal ala	7		FAC	8. Sal arc	1		FAC
3. Pot fru	20	X	FAC	9.			
4. Rho lap	10		FAC	10.			
5. Bet nan	15	X	FAC	11.			
6. Ar rub	2		FACW	12.			

Total Sapling/Shrub Cover: 81
50% of total cover: 40.5 20% of total cover: 16.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car mic	30	X	FAC	12.			
2. Hed alp	7		UPL	13.			
3. Fest alt	30	X	FAC	14.			
4. Car scir	15		FACW	15.			
5. Song off	1		FACW	16.			
6. Min arc	2		UPL	17.			
7. Sau ang	1		FACW	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 86
50% of total cover: 43 20% of total cover: 17.2

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

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 4	X2= 8
FAC species 119	X3= 357
FACU species 35	X4= 140
UPL + NL species 9	X5= 45
Column Totals: 167 (A)	550 (B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%
NO Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Bet nan is <1'

SOIL

Sampling Point #: 29

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
1-0	O1									
0-3	A	10YR3/2							neg	
3-7	B	10YR4/1	30					sal	neg	
		10YR5/2	70						K	
7-19		Variegated						sand	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch 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):
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

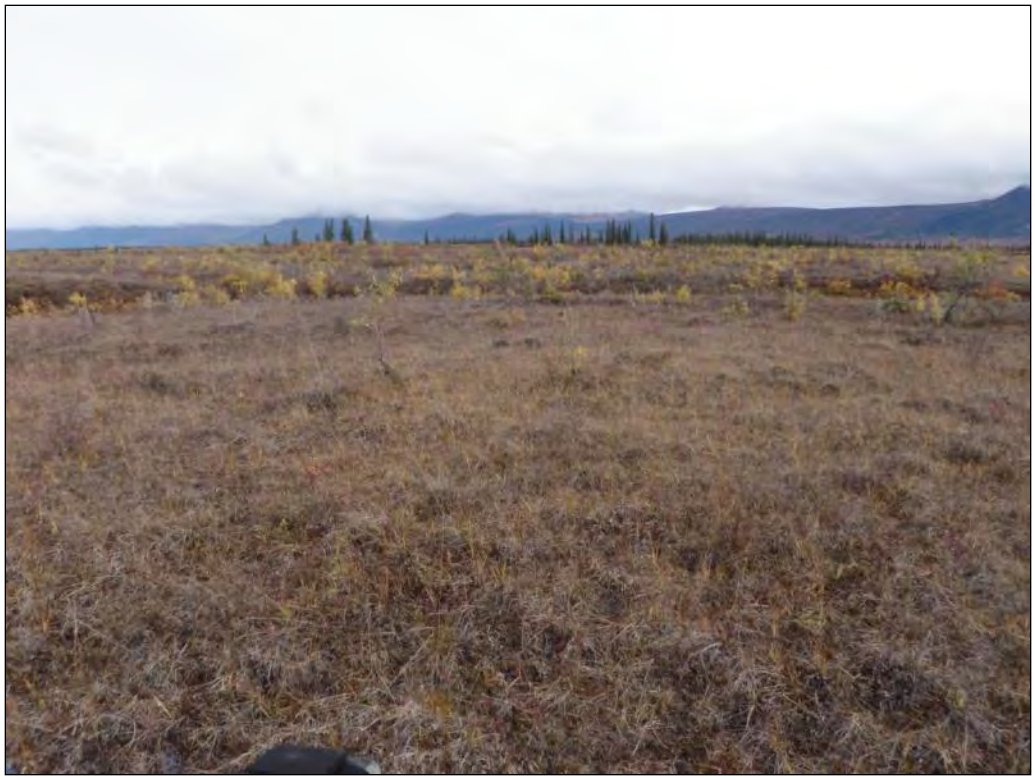
Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Mat. site Borough/City: N/W Arctic Date: 9/7/12

Applicant/Owner: DOT Sampling Point #: 33

Investigator(s): Marc S. Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.16090 Long. 157.04953 ± ' NAD 83 Recorded on GPS #: Y Marked on map? X Field Map #: AMB10

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: PSSI/EMIC

Photo nos./descriptions: 170-171 soil 172-173 veg Camera #: — Veg Type (Viereck Level 4 or other): —

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

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Low willow open scrub birch

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: —

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet nan	20	X	FAC	7. Vac vit	2		FAC
2. Are rub	2		FACW	8.			
3. Rho lap	6		FAC	9.			
4. Sal ret	2		FAC	10.			
5. Pot fru	15	X	FAC	11.			
6. Pic glau	2		FACU	12.			

Total Sapling/Shrub Cover: 49

50% of total cover: 24.5 20% of total cover: 9.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car sci	10		FACW	12.			
2. Car gyn	1		OBL	13.			
3. Tof pus	2		FAC	14.			
4. Eri ang	20	X	OBL	15.			
5. Eri rubs	2		FACW	16.			
6. Bis plu	1		FACU	17.			
7. Fes alt	1		FAC	18.			
8. Eri sch	15	X	OBL	19.			
9. Equ var	1		FACW	20.			
10.				21.			
11.				22.			

Total Herb Cover: 53

50% of total cover: 26.5 20% of total cover: 10.6

Circular 1/10-ac plot ✓ or other plot dimension: — % of bare ground: —

% Cover of Wetland Bryophytes (where applicable) — % Total Cover of Bryophytes 80 %

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	36	X1=	36
FACW species	5	X2=	10
FAC species	48	X3=	144
FACU species	13	X4=	52
UPL + NL species	—	X5=	—
Column Totals:	102 (A)		242 (B)

Prevalence Index = B/A = 2.37

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 Present? Yes X No —

Remarks:

SOIL

Sampling Point #: 33

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
4-0	Oi									
0-1	A	10YR3/3								
1-16	B	N4/1	90	10YR4/6	10	RMF	RC	FSaL	pos	lots of organics throughout

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- X Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ___ Depth of water (in.) 2
Water Table Present? Yes X No ___ Depth to water (in.) 0
Seeping in at that depth but not yet filled?: X
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

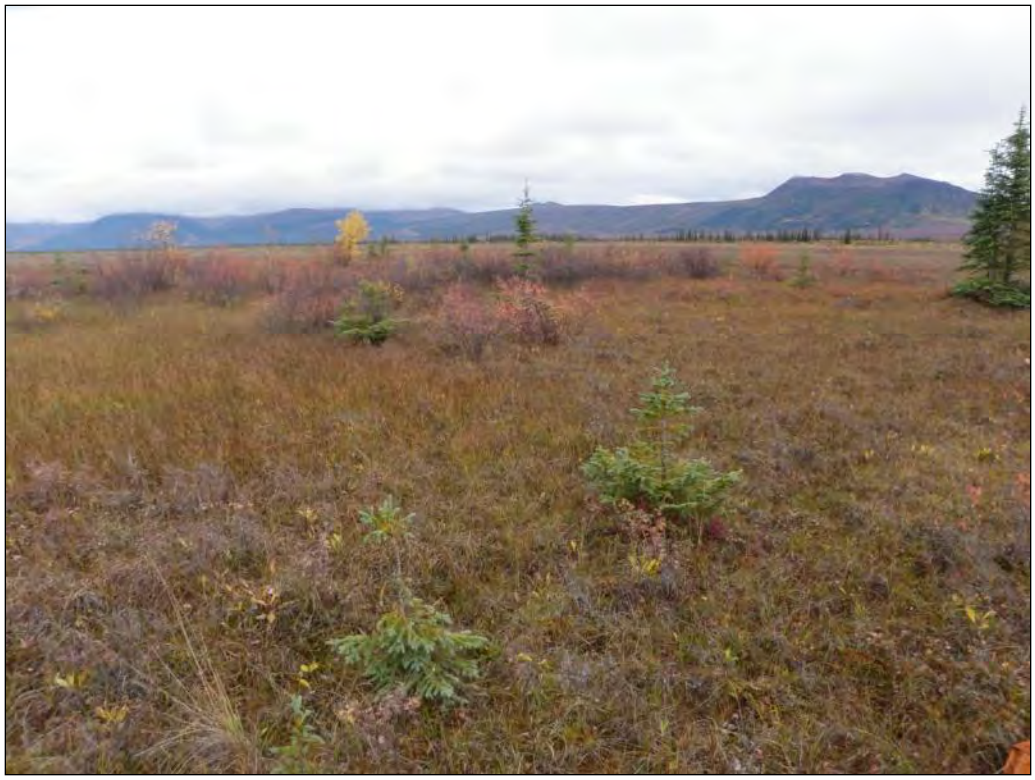
Wetland Hydrology Present? Yes X No ___

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

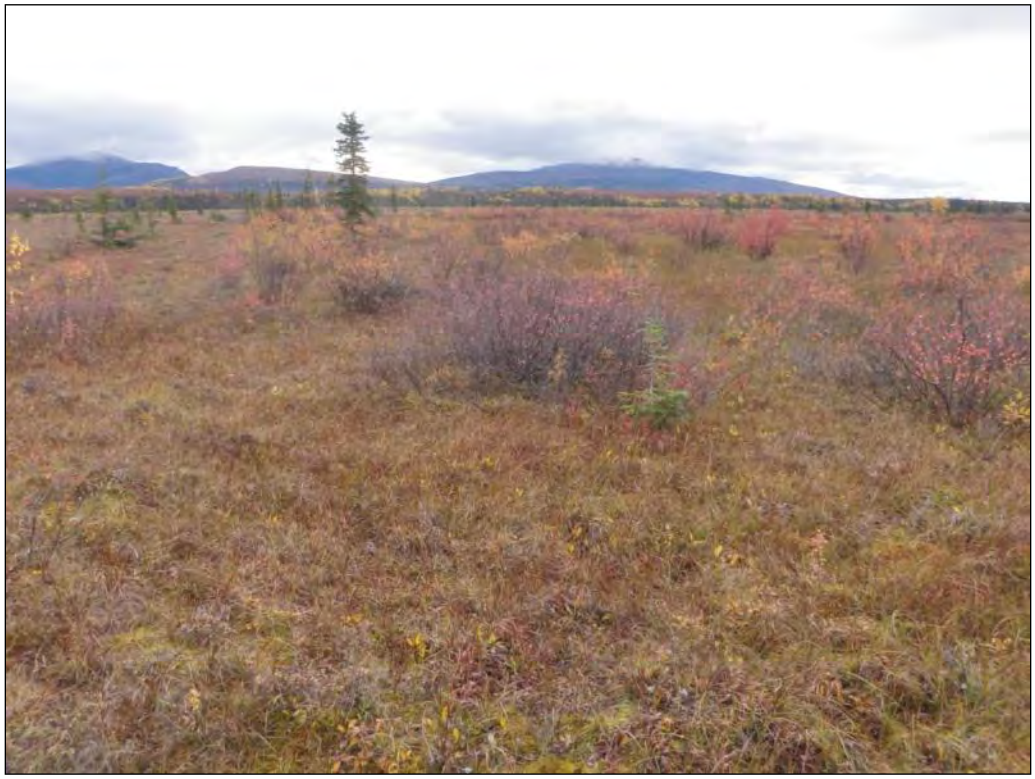
Remarks: water table at 13" but seeping in all the way to surface

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

Project: Ambler Material Site Borough/City: NW Arctic Date: 9/8/12

Applicant/Owner: DOT Sampling Point #: 42

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.15164 Long. 157.03047 ±___' NAD 83 Recorded on GPS #: X Marked on map? X Field Map #: ____

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Valley bottom Slope (%): ____ Aspect: ____

Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: PSSIC

Photo nos./descriptions: Soil 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: X No: ____ HGM type: ____

Are Vegetation N, Soil N, or Hydrology 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 shrub (6' tall)

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.)

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ____

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

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

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Sal ala	15		FAC	7.			
2. Myr gal	20		OBL	8.			
3. Vacc vit	20		FAC	9.			
4. Sal rich	80	X	FACW	10.			
5. Pot fru	5		FAC	11.			
6. Arc rub	3		FACW	12.			

Total Sapling/Shrub Cover: 143

50% of total cover: 71.5 20% of total cover: 28.6

Herb Stratum

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Equ var	3		FACW	2.			
2. Cal can	5		FAC	13.			
3. Pot pal	2		FAC	14.			
4. Car rot	10	X	OBL	15.			
5. Rub arc	1		FAC	16.			
6. Poa sp	3		NL	17.			
7. Equ bor	1		FACU	18.			
8. Car mem	10	X	FACW	19.			
9. Pac kot	1		FACW	20.			
10.				21.			
11.				22.			

Total Herb Cover: 36

50% of total cover: 18 20% of total cover: 7.2

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

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	X1=	30
FACW species	97	X2=	194
FAC species	48	X3=	144
FACU species	1	X4=	4
UPL + NL species	3	X5=	15
Column Totals:	179 (A)		387 (B)

Prevalence Index = B/A = 2.16

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 Present? Yes X No ____

Remarks:

SOIL

Sampling Point #: 42

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

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
8-0	O1									
0-12	B	5Y3/1		—	—	—	—	sil	neg	

[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, **msr from top of mineral layers unless otherwise noted):**

- ___ Histosol or Histel (A1) (≥16",sat'd during wet period of growing season)
- X Histic Epipedon (A2)(8-16", sat'd, underlain by mineral soil with chroma ≤2)
- ___ Hydrogen Sulfide (A4) (w/in 12"of ground surface; @ ___" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: None
Depth (inches) ___

Drainage Class: PD
Soil Map Unit Name: —

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- X Drainage Patterns (B10) adjacent to riverland
- ___ Oxid'd Rhizospheres on Living Roots (C3) (w/in 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes X No ___ Depth of water (in.) 12
Water Table Present? Yes X No ___ Depth to water (in.) 6
Seeping in at that depth but not yet filled: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Mat Site Borough/City: NW Arctic Date: 9/8/12
Applicant/Owner: DOT Sampling Point #: 43
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.15199 Long. 157.02942 ±___' NAD 83 Recorded on GPS #: Y Marked on map? X AMB31 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: PSSI/EMIB
Photo nos./descriptions: 199-202, 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: ___ If no, explain. wetter HGM type: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Vaccuti, Car sci meadow

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ____

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Vacc uli	70	X	FAC	7. Arc rub	1	___	FACW
2. Pho lapp	10	___	FAC	8. Dry int	20	___	FACU
3. Sal ret	20	___	FAC	9.			
4. Pot fru	5	___	FAC	10.			
5. Sal pul	5	___	FAC	11.			
6. Pic glu	3	___	FACU	12.			

Total Sapling/Shrub Cover: 114 134

50% of total cover: 57 67 20% of total cover: 26.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Equ var	5	___	FACW	12.			
2. ~~Dry int~~	~~20~~	~~X~~	~~FACU~~	13.			
3. Bis plu	1	___	FACU	14.			
4. Car sci	20	X	FACU	15.			
5. Car mem	10	X	FACW	16.			
6. Grass sp.	1	___	NL	17.			
7. Ped sud	1	___	FACW	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 58 38

50% of total cover: 29 19 20% of total cover: 11.6 7.6

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	12	X2=	24
FAC species	110	X3=	330
FACU species	44	X4=	176
UPL + NL species	1	X5=	5
Column Totals:	167 (A)		535 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

Yes/~~No~~ Dominance Test is>50%
~~No~~ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No S

Remarks: Moss 85%

SOIL

Sampling Point #: 43

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
2-0	O1									
0-7	A	10YR2/1		—				sil	neg	
2-6	B1	2.5Y3/1						sil	neg	
6-10	B2	10Y3/1	90	5YR4/6	10	RMF	RC	sil	pos	
10-17	B3	10Y3/1	70	7.5YR3/4	30	RMF	Ma	sil	pos	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- X Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: SWPD
Soil Map Unit Name: —

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

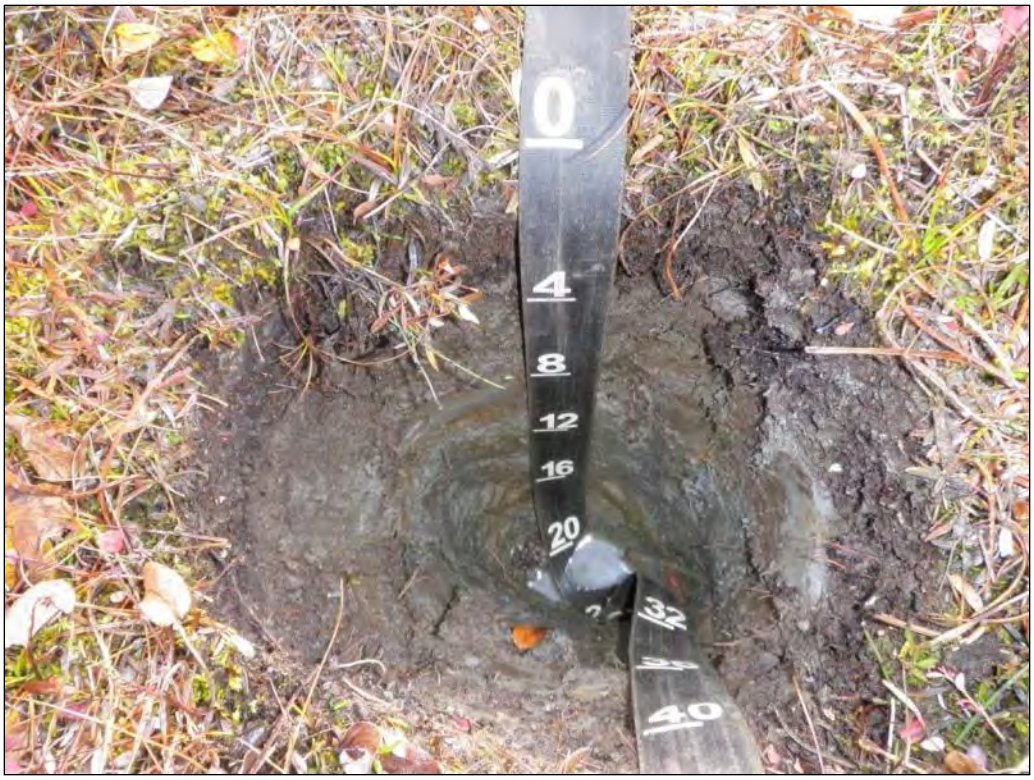
- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes ___ No X Depth of water (in.) _____
Water Table Present? Yes X No ___ Depth to water (in.) 13
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 5
(includes capillary fringe) Epi (Endo) Unknown

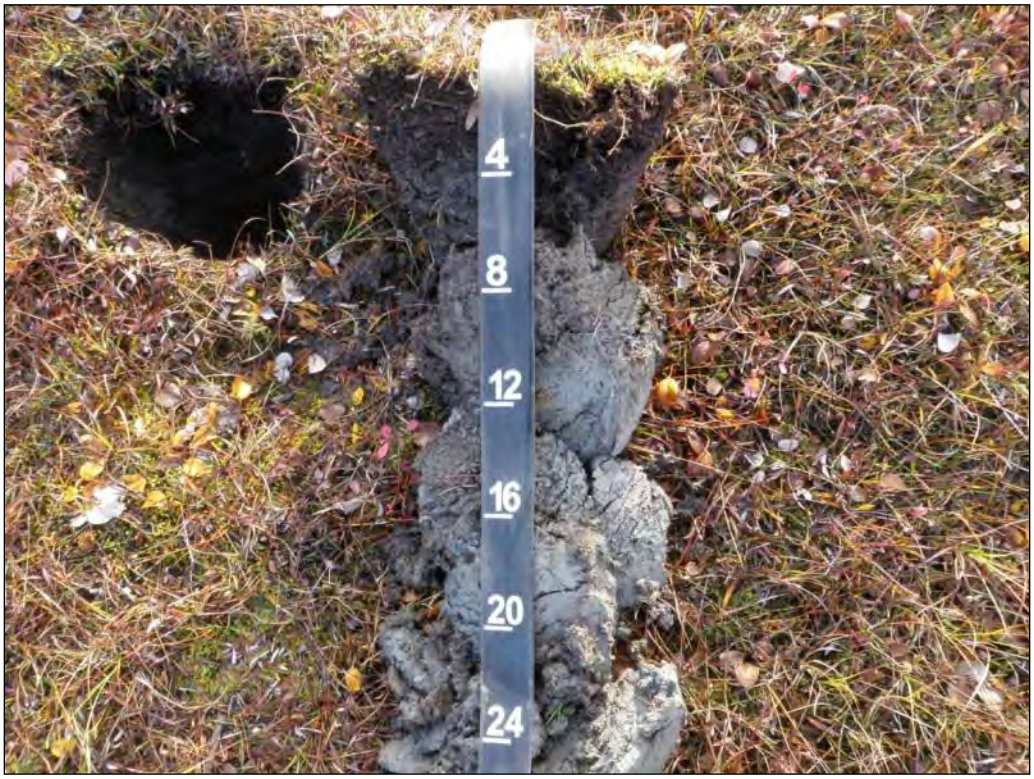
Wetland Hydrology Present? Yes X No ___

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

Remarks: Water @ 13, Seeping in at 9" - will eventually fill to 9"



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. Site Borough/City: NW Arctic Date: 9/8/12

Applicant/Owner: DOT Sampling Point #: 44

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.15263 Long. -157.03009 ± ' NAD 83 Recorded on GPS #: AMB 32 Marked on map? X Field Map #:

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

Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland

Photo nos./descriptions: 203-206 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: —

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.)

Tree Stratum (dbh≥ 3")

Sp.	Abs.Cov.%	Dom?	Ind.	Species	Abs.Cov.%	Dom ?	Ind.
1. Pic glau	10	X	FACU	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 10

50% of total cover: 5 20% of total cover: 2

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

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Dry int	20	X	FACU	7. Betnan	10		FAC
2. Pic glau	10		FACU	8. Vacc vit	1		FAC
3. Vacc vit	25	X	FAC	9. Led dec	2		FACW
4. Rho lapp	5		FAC	10. Sal ret	6		FAC
5. Pot fru	5		FAC	11.			
6. Sal rich	5		FACW	12.			

Total Sapling/Shrub Cover: 89

50% of total cover: 44.5 20% of total cover: 17.8

Herb Stratum

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Car sci	20	X	FACU	12.			
2. San ann	1		FAC	13.			
3. Fest alti	2		FAC	14.			
4. Poa sp.	2		NL	15.			
5. Tof pus	2		FAC	16.			
6. Ped sud	1		FACW	17.			
7. Ped lann	1		FACW	18.			
8. Min gre	1		UPL	19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 30

50% of total cover: 15 20% of total cover: 6.0

Circular 1/10-ac plot ✓ or other plot dimension: _____ % of bare ground: _____

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	9	X2=	18
FAC species	57	X3=	171
FACU species	60	X4=	240
UPL + NL species	3	X5=	15
Column Totals:	129 (A)		444 (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

No Dominance Test is>50%

No Prevalence Index is ≤3.0

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

_____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Hard freeze ~10 days ago. Most shrubs w/out leaves.

SOIL

Sampling Point #: 44

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

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	Oi									
0-1	A	10YR2/1								
1-19	B	2.5Y4/1.5	65	2.5YR3/4	5	RMF	RC	sil	neg	10YR4/4 *

[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, **msr from top of mineral layers unless otherwise noted):**

- N Histosol or Histel (A1) (≥16",sat'd during wet period of growing season)
- ___ Histic Epipedon (A2)(8-16", sat'd, underlain by mineral soil with chroma ≤2)
- ___ Hydrogen Sulfide (A4) (w/in 12"of ground surface; @ ____" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: —
Depth (inches) ____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. * Matrix color 30%
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) ____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (w/in 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")
- V Microtopographic Relief (D4) (caused by water)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

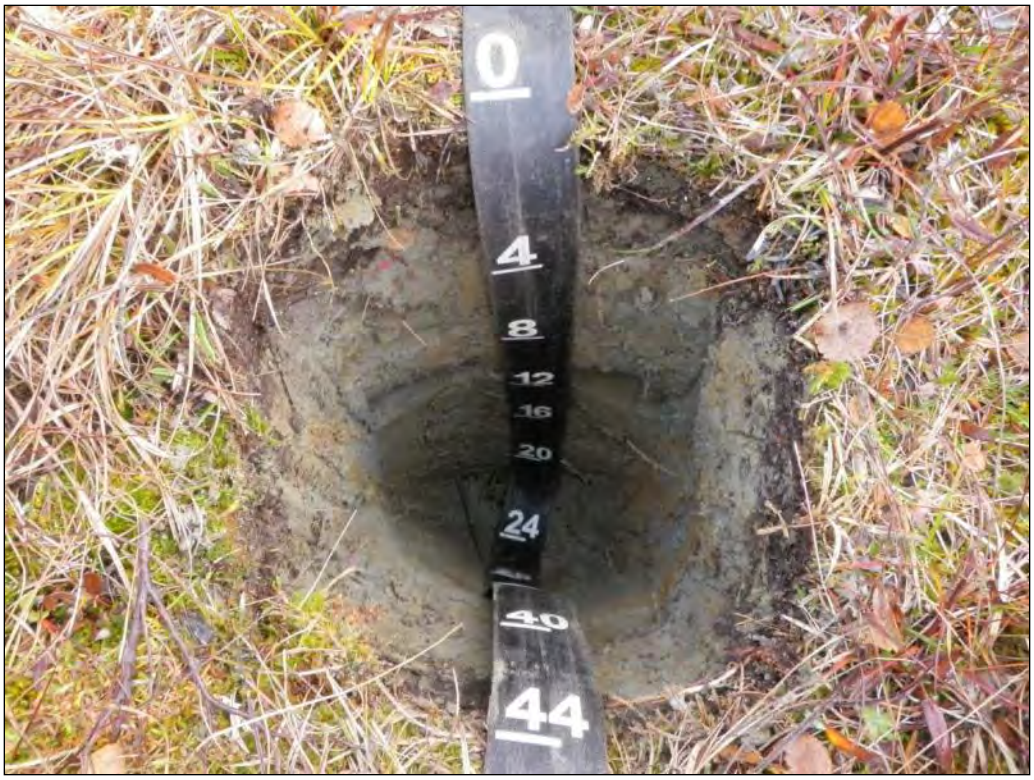
Seeping in at that depth but not yet filled: ____

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:



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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Ambler Mat Site Borough/City: Arctic NSB Date: 9/8/12
Applicant/Owner: DOT Sampling Point #: 47
Investigator(s): Mac S., Day J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.15333 Long. 157.03276 ±___' NAD 83 Recorded on GPS #: Y Marked on map? X Field Map #: AMB29
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Flat Slope (%): — Aspect: —
Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/EMIC
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: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Shrub birch tussock tundra

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

VEGETATION (Use scientific names.)

Tree Stratum (dbh≥ 3")

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

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

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

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Bet nan	50	X	FAC	7.			
2. Dry int	20	X	FACU	8.			
3. Sal arc	7		FAC	9.			
4. Pot Fru	5		FAC	10.			
5. Vacc uli	2		FAC	11.			
6. Sal pul	2		FAC	12.			

Total Sapling/Shrub Cover: 86
50% of total cover: 43 20% of total cover: 17.2

Herb Stratum

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Eri vag	10	X	FACW	12.			
2. Car aqu	15	X	FACW	13.			
3. Car gyn	1		OBL	14.			
4. Equ var	3		FACW	15.			
5. Tof pus	1		FAC	16.			
6. Red sp. lang	1		FACW	17.			
7. Car rot	2		OBL	18.			
8. Eri ang	10	X	OBL	19.			
9. Car aqu	5		OBL	20.			
10.				21.			
11.				22.			

Total Herb Cover: 48
50% of total cover: 24 20% of total cover: 9.6

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	18	X1=	18
FACW species	14	X2=	28
FAC species	67	X3=	201
FACU species	35	X4=	140
UPL + NL species	—	X5=	—
Column Totals:	134 (A)		387 (B)

Prevalence Index = B/A = 2.89

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 Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 47

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

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
4-0	O1									
0-2	A	10YR2/1								
2-16	B	4/N4/1	-	-	-	-	-	sil	pos	

[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, **msr from top of mineral layers unless otherwise noted**):

- ___ Histosol or Histel (A1) (≥16",sat'd during wet period of growing season)
- ___ Histic Epipedon (A2)(8-16", sat'd, underlain by mineral soil with chroma ≤2)
- ___ Hydrogen Sulfide (A4) (w/in 12"of ground surface; @ ___" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox with 2.5Y Hue
- X Alaska Gleyed without Hue 5Y or Redder Underlying Layer
- ___ Other (e.g., see p.91 of 2007 Supplement; explain in Remarks)

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

Restrictive Layer (if present)
Type: none
Depth (inches) ___

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1. no redox features and no red layer underneath, but gley soil w/ 1° hydrology indicators meets it a hydric soil. Plus positive alpha alpha
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) ___
- ___ Oxid'd Rhizospheres on Living Roots (C3) (w/in 12")
- X 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)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

Surface Water Present? Yes X No ___ Depth of water (in.) 6

Water Table Present? Yes X No ___ Depth to water (in.) 0

Seeping in at that depth but not yet filled: ___

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

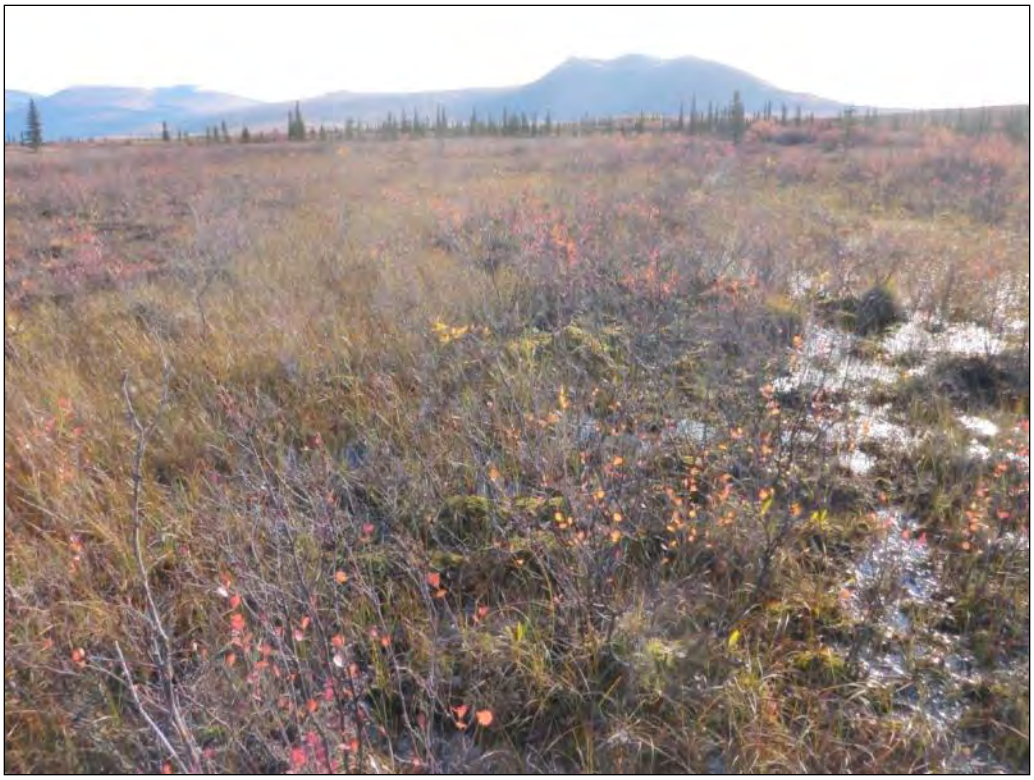
Wetland Hydrology Present? Yes X No ___

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

Remarks:

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: Ambler Mat Site Borough/City: NW Arctic Date: 9/8/12
Applicant/Owner: DOT Sampling Point #: 57
Investigator(s): Maw S., Day J. Firm: HDR Alaska, Inc. AMB19
Lat. (dec.°) 67.15748 Long. 157.04053 ±___' NAD 83 Recorded on GPS #: N Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Plat Slope (%): — Aspect: —
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
Photo nos./descriptions: 233-236 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: ___ If no, explain. wet HGM type: —
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Graminoid tundra

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

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

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Dry int	25	X	FACU	7. Sal ret	6		FAC
2. Pot fru	20	X	FAC	8. Sal ala	1		FAC
3. Vac uli	16		FAC	9. Ale rub	2		FACW
4. Pic gla	2		FACU	10.			
5. Bet nan	16		FAC	11.			
6. Rho lapp	6		FAC	12.			

Total Sapling/Shrub Cover: 82
50% of total cover: 41 20% of total cover: 16.4

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car mic	15	X	FAC	12.			
2. Min arc	2		UPL	13.			
3. Carex sp	3		NL	14.			
4. Sau ang	3		FAC	15.			
5. Ped lan	1		FACW	16.			
6. Fest alt	15	X	FAC	17.			
7. Car sci	5		FACW	18.			
8. Pea sp.	2		NL	19.			
9. Bis pla	T		FAC	20.			
10. Sax nel	T		FAC	21.			
11.				22.			

Total Herb Cover: 46
50% of total cover: 23 20% of total cover: 9.2
Circular 1/10-ac plot ✓ or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes (where applicable) ___% Total Cover of Bryophytes ___%

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	3	X2=	6
FAC species	86	X3=	258
FACU species	32	X4=	128
UPL + NL species	7	X5=	35
Column Totals:	128 (A)		427 (B)

Prevalence Index = B/A = 3.34

Hydrophytic Vegetation Indicators:
✓ Dominance Test is>50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 57

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	Oi									
0-3	A	10YR4/2							neg	
3-16	B	10YR5/1	75					Sal	neg	
		2.5Y5/4	20							
		2.5YR3/4	5							

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ✓ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ✓ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ✓ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ___ No X

Comments:
1. Big almost pure sand
2. Redox features bright. Lots of water drains through here when ice melts
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ✓ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch 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):
Surface Water Present? Yes ___ No X Depth of water (in.) _____
Water Table Present? Yes ___ No X Depth to water (in.) _____
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes ___ No X Depth to sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

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: Ambler Mat Site Borough/City: NW Arctic Date: 9/8/12
Applicant/Owner: DOT&PF Sampling Point #: 63
Investigator(s): Mac S Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.15289 Long. 157.04422 ±___' NAD 83 Recorded on GPS #: Y Marked on map? AMB67 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: PEM1/SSIC
Photo nos./descriptions: 247-250 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: ___ If no, explain. wet HGM type: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Sedge tundra wet

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pot Fru	15	X	FAC	7. Sal pul	3		FAC
2. Ros nut	1		FACW	8. Vacc uli	10	X	FAC
3. Sal ova	5		FAC	9.			
4. Bet nan	5		FAC	10.			
5. Rho lap	3		FAC	11.			
6. Dry int	15	X	FACW	12.			

Total Sapling/Shrub Cover: 67
50% of total cover: 33.5 20% of total cover: 13.4

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car aqu	20	X	FACW	12. Eri sch	2		OBL
2. Car mic	8	X	FAC	13.			
3. Equ var	5		FACW	14.			
4. Car gyn	5		OBL	15.			
5. Car aqu	10	X	OBL	16.			
6. Grass sp.	5		NL	17.			
7. Ped sud	1		FACW	18.			
8. Equ fly	1		OBL	19.			
9. Car sax	7		FACW	20.			
10. Sang off	1		FACW	21.			
11. Jun tri	1		FACW	22.			

Total Herb Cover: 66
50% of total cover: 33 20% of total cover: 13.2

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	18	X1=	18
FACW species	16	X2=	32
FAC species	49	X3=	147
FACU species	35	X4=	140
UPL + NL species	5	X5=	25
Column Totals:	123 (A)		362 (B)

Prevalence Index = B/A = 2.94

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 Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 63

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
2-0	Oi									
0-3	A	10YR3/1						si l	neg	
3-4	Deb									
4 8-8	B1	5Y4/1	80	10YR4/4	20	RMF	RC	si l	neg	
8-18	B2	10Y4/1	90	2.5Y4/4	10	RMF	RC	si l	pos	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- X Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name: _____

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes X No ___ Depth of water (in.) 4
Water Table Present? Yes X No ___ Depth to water (in.) 12
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Remarks: Seeping in at 4"

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: Ambler Met Site (Coord) Borough/City: NW Arctic Date: 9/9/12

Applicant/Owner: DOT MPF Sampling Point #: ~~68~~ 69

Investigator(s): Mac S., Tony J. Firm: HDR Alaska, Inc. AMB113 GPS point 68

Lat. (dec.°) 67.12068 Long. 157.78529 ±___' NAD 83 Recorded on GPS #: X Marked on map? X Field Map #: ____

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Flat Slope (%): 1-2 Aspect: NW

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

Photo nos./descriptions: 261-264 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: ___ If no, explain. HGM type: ____

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic gla	20	X	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 20

50% of total cover: 10 20% of total cover: 4.0

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pic gla	7		FACW	7. Sal ret	8		FAC
2. Pot fru	16	X	FAC	8. Arc rub	5		FACW
3. Jun com	2		UPL	9. Sal rich	5		FACW
4. Lin bor	3		UPL	10. Sal gla	10	X	FAC
5. Vacculi	25	X	FAC	11. Tha spar	1		FACU
6. Ros aci	15	X	FACU	12. Dry int	2		FACU
Bet gla	5		FAC				

Total Sapling/Shrub Cover: 98

50% of total cover: 49 20% of total cover: 19.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. San ung	2		FAC	12. Cor mem	1		FACW
2. Hed alp	2		UPL	13.			
3. Equ arv	5		FAC	14.			
4. Car aur	2		FACW	15.			
5. Car bro	10	X	FAC	16.			
6. Rubarc	1		FAC	17.			
7. Gal bor	1		FACU	18.			
8. Car sci	10	X	FACU	19.			
9. Equ var	2		FACW	20.			
10. Grass sp	2		NL	21.			
11. Sal sp (flowers)	1		NL	22.			

Total Herb Cover: 39

50% of total cover: 19.5 20% of total cover: 7.8

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

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 57% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	15	X2=	30
FAC species	76	X3=	228
FACU species	56	X4=	224
UPL + NL species	10	X5=	50
Column Totals:	157 (A)		532 (B)

Prevalence Index = B/A = 3.39

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%

No Prevalence Index is ≤3.0

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 68

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
2-0										
0-3	A							sil		
3-10	B1	5Y 3/1		7.5YR 3/3	10	RMF	RC	sil	neg	
10-20	B2	10YR 4/1		10YR 3/3	5	RMF	RC	sil	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- ____ 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)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1) (w/in 12")
- ____ Dry-Season Water Table (C2) (w/in 24")
- ____ Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ____ Microtopographic Relief (D4) (caused by water)
- N FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

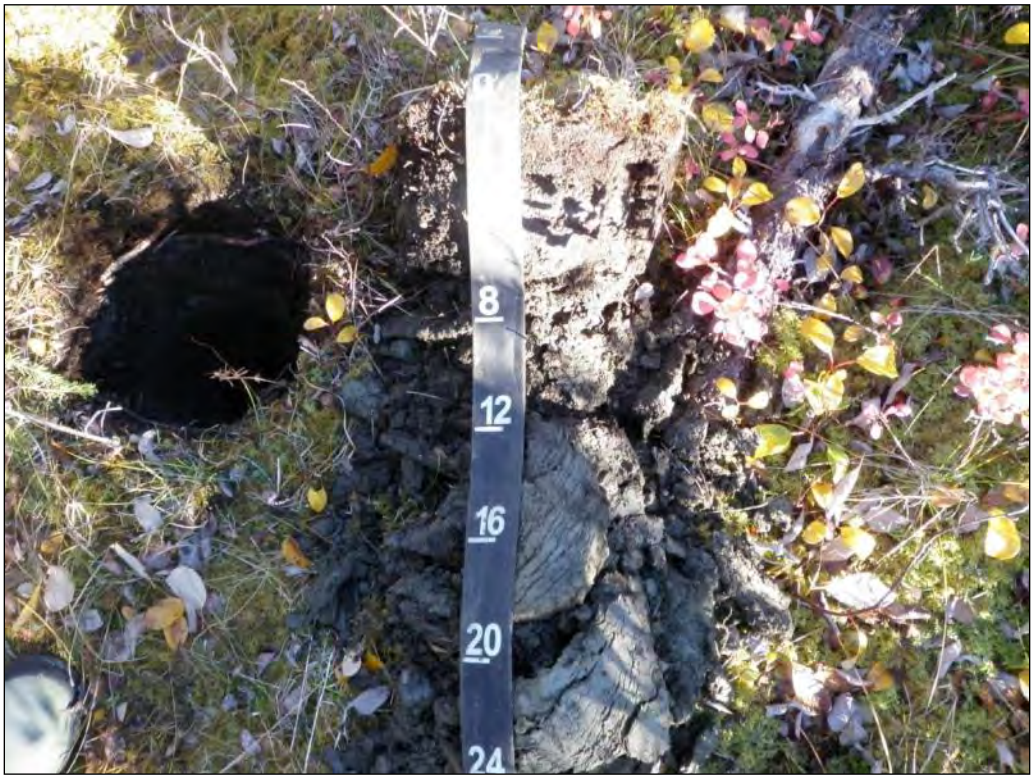
Saturation Present? Yes ____ No X Depth to sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

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

Remarks: Year of highest recorded rainfall. No hydrology indicators

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: Ambler Mat. Site Road Borough/City: NW Arctic Date: 9/9/12
Applicant/Owner: DOT Sampling Point #: 670
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc. GPS point 69
Lat. (dec.°) 67.12160 Long. 157.78596 ±___' NAD 83 Recorded on GPS #: ___ Marked on map? ___ Field Map #: ___ AMBLIS
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: hillside Slope (%): 2 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
Photo nos./descriptions: 265-268 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: ___ If no, explain. HGM type: ___
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N/A Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic mar	10	X	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 10
50% of total cover: 5 20% of total cover: 2

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Aln fru	6		FACW	7. Sal glu	5		FAC
2. Bet nan	10		FACW	8.			
3. Vac vit	5		FAC	9.			
4. Vac uli	30	X	FAC	10.			
5. Emp nig	3		FAC	11.			
6. Pic mar	15	X	FACW	12.			

Total Sapling/Shrub Cover: 74
50% of total cover: 37 20% of total cover: 14.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Sau arg	1		FAC	12.			
2. Equ arv	6	X	FAC	13.			
3. Car mem	1		FACW	14.			
4. Car aur	1		FACW	15.			
5. Car big	1		FAC	16.			
6. Cha ang	1		FACU	17.			
7. Car sc4	2	X	FACU	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 13
50% of total cover: 6.5 20% of total cover: 2.6

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

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	–	X1=	–
FACW species	47	X2=	94
FAC species	51	X3=	153
FACU species	9	X4=	36
UPL + NL species	–	X5=	–
Column Totals:	107 (A)		283 (B)

Prevalence Index = B/A = 2.64

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 Present? Yes X No ___

Remarks: Lichen

SOIL

Sampling Point #: 69

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
5-0	Oi									
0-4	A	10YR3/2						sil	neg	
4-15	B/C	Variegated						sand	neg	pure sand

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- N Histosol or Histel (A1) (≥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)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change[4] (TA4)
- 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. Sand drains water quickly
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks: No hydro indicators

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

Project: Anaktuvuk Mat. Site (pond) Borough/City: Northwest Arctic Date: 9/9/12
Applicant/Owner: Sampling Point #: 72
Investigator(s): Mac S., Dan, Jeff Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.12358 Long. 157.78705 ±___' NAD 83 Recorded on GPS #: ___ Marked on map? X (Aug 19) 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: Upland
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. wet HGM type: ___
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

willow thicket

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic glau	5	X	FACU	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 5
50% of total cover: 2.5 20% of total cover: 1.0

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Sal rich	80	X	FACW	7. Ros aci	5		FACU
2. Vac uli	1		FAC	8.			
3. Sal glau	15		FAC	9.			
4. Bet nan	5		FAC	10.			
5. Pot fru	2		FAC	11.			
6. Pic gla	2		FACU	12.			

Total Sapling/Shrub Cover: 110
50% of total cover: 55 20% of total cover: 22.0

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Equ arv	20	X	FAC	12.			
2. Pot gra	1		FAC	13.			
3. Equ var	2		FACW	14.			
4. Cal can	3		FAC	15.			
5. Stellaria sp.	1		NL	16.			
6. Sau ang	1		FAC	17.			
7. Car cap	1		FAC	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 29
50% of total cover: 14.5 20% of total cover: 5.8

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	82	X2=	164
FAC species	49	X3=	147
FACU species	12	X4=	48
UPL + NL species	1	X5=	5
Column Totals:	144 (A)		364 (B)

Prevalence Index = B/A = 2.53

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 Present? Yes X No ___

Remarks: Bare ground
Leaf litter 50%

SOIL

Sampling Point #: 72

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	O									
0-4	A	10YR 3/1								
4-16	B	2.5Y 4/1	60					Sil	neg	
		10YR 4/4	40							

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. pockets of organics make up 15% of A.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- X 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)
- X Iron Deposits (B5)
- X Surface Soil Cracks (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")
- X Other (explain)

Secondary Indicators (at least 2 are required)

- X 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")
- X Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks: moist @ 10" but not saturated

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

Project: Ambler Mat Site Road Borough/City: Arctic NW Date: 9/9/12

Applicant/Owner: DOT Sampling Point #: 076

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc. AMP 114

Lat. (dec.°) 67.12753 Long. -157.79788 ± ' NAD 83 Recorded on GPS #: Y Marked on map? Y 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: PFO1/SS1B

Photo nos./descriptions: 281-284 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: ___ If no, explain. HGM type: Flat

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic mar	10	X	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 10

50% of total cover: 5 20% of total cover: 2

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Lod dec	20	X	FACW	7. Aln frut	2		FACU
2. Vacc vit	15	X	FAC	8. Sal gla	1		FAC
3. Vacc uli	20	X	FAC	9.			
4. Emp nig	3		FAC	10.			
5. Pic mar	15	X	FACW	11.			
6. Sal pul	5		FAC	12.			

Total Sapling/Shrub Cover: 81

50% of total cover: 40.5 20% of total cover: 16.2

Herb Stratum

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

Total Herb Cover: 11

50% of total cover: 5.5 20% of total cover: 2.2

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

% Cover of Wetland Bryophytes _____ % Total Cover of Bryophytes 90 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 54	X2= 108
FAC species 46	X3= 138
FACU species 2	X4= 8
UPL + NL species —	X5= —
Column Totals: 102 (A)	254 (B)

Prevalence Index = B/A = 2.49

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 Present? Yes X No ____

Remarks: Moss 90% (Feather)

SOIL

Sampling Point #: 76

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
4-0	Oi									
0-11		N3/1							pos	
		5YR3/3								
11+	Permafrost									

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)
- X 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 (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: Permafrost
Depth (inches) 19"

Drainage Class: PD
Soil Map Unit Name: -

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- X 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.) _____

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

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

Saturation Present? Yes X No ___ Depth **to** sat. (in.) 8

(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Remarks: Seeping in 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: Anaktuvuk Mat. Site Road Borough/City: Arctic NW Date: 9/9/12

Applicant/Owner: DOT Sampling Point #: 78

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.12801 Long. 157.80351 ± ' NAD 83 Recorded on GPS #: X Marked on map? X Field Map #: AMB106

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: _____ Slope (%): 1-2 Aspect: South

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

Photo nos./descriptions: 287-290 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: ___ If no, explain. HGM type: ____

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pop tremu	3	___	FACU	5.	___	___	___
2. Pic glau	15	X	FACU	6.	___	___	___
3.	___	___	___	7.	___	___	___
4.	___	___	___	8.	___	___	___

Total Tree Cover: 18

50% of total cover: 9 20% of total cover: 3.6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pop tremu	6	___	FACU	7. Emp nig	10	___	FAC
2. Vacc uli	20	X	FAC	8. Ros aci	2	___	FACW
3. Vacc vit	15	X	FAC	9. Betnan	3	___	FAC
4. Ledpal	25	X	FACW	10.	___	___	___
5. Sal glau	10	___	FAC	11.	___	___	___
6. Sal rotu	10	___	FACW	12.	___	___	___

Total Sapling/Shrub Cover: 101

50% of total cover: 50.5 20% of total cover: 20.2

Herb Stratum

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

Total Herb Cover: 4

50% of total cover: 2 20% of total cover: 0.8

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

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

Remarks: Lichen 15%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	35	X2=	70
FAC species	62	X3=	287
FACU species	26	X4=	104
UPL + NL species	—	X5=	—
Column Totals:	123 (A)		461 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

✓ Dominance Test is>50%

No Prevalence Index is ≤3.0

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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Alaska Version 2.0 Modified by HDR

SOIL

Sampling Point #: 78

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	O									
0-1	A	10YR4/4						sil	neg	
1-3		~~10YR4/2~~ 5YR						sil		
7-7	B	10YR4/2 5YR3/4	80 20					Sal	neg	
7-15	B/C	7.5YR3/4		—				Sand	neg	
15-20	C	10YR 3/4						Sand	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- [N] Histosol or Histel (A1) (≥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)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [ ] Alaska Color Change[4] (TA4)
- [ ] 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. Well drained. Brown sand.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- [N] Water-Stained Leaves (B9)
- [ ] Drainage Patterns (B10) _____
- [ ] Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- [ ] Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3) (w/in 24", can perch 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):

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks: Wetland

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.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project: Hubbler Airport Borough/City: Arctic Northwest Date: 9/10/17
Applicant/Owner: DOT Sampling Point #: 92
Investigator(s): Mac S Jay J Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.10508 Long. 157.84999 ±___' NAD 83 Recorded on GPS #: D Marked on map? ___ Field Map #: ___
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: gentle slope Slope (%): 2 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
Photo nos./descriptions: 317-320 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: ___ If no, explain. HGM type: ___
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Open poptram white spruce forest

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic gla	5		FACU	5.			
2. Pop tram	20	X	FACU	6.			
3. Pic mar	5		FACW	7.			
4.				8.			

Total Tree Cover: 30
50% of total cover: 15 20% of total cover: 6

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Led Dec	60	X	FACW	7. Sal glau	5		FAC
2. Vacc uli	20	X	FAC	8. Betnan	5		FAC
3. Vacc vit	15		FAC	9. Sal rich	5		FACW
4. Pic mar	4		FACW	10. Emp nig	15		FAC
5. Pic glau	5		FACU	11.			
6. Pop tram	3		FACU	12.			

Total Sapling/Shrub Cover: 139
Shrub 50% of total cover: 69.5 20% of total cover: 27.8

~~Herb Stratum~~

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

~~Total Herb Cover~~: ___
~~50% of total cover:~~ ___ ~~20% of total cover:~~ ___

Circular 1/10-ac plot ___ or other plot dimension: ___ % of bare ground: 5
% Cover of Wetland Bryophytes ___ % Total Cover of Bryophytes 15 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	74	X2=	148
FAC species	61	X3=	183
FACU species	34	X4=	136
UPL + NL species	—	X5=	—
Column Totals:	169 (A)		467 (B)

Prevalence Index = B/A = 2.76

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 Present? Yes X No ___

Remarks: 3 days of frost this year so far
Downed trees (Lagens) 3%
★ Herb stratum < 5%, combined w/ shrub stratum

SOIL

Sampling Point #: 92

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	O;									
0-8	B1	5Y4/1	60	7.5				sil	neg	
		7.5YR4/6	40							
8-17	B2	10YR4/1						sil	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- N Histosol or Histel (A1) (≥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)
- Alaska Gleyed (A13)
- Alaska Redox (A14)
- Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- N Alaska Color Change[4] (TA4)
- Alaska Alpine Swales (TA5)
- Alaska Redox with 2.5Y Hue
- Alaska Gleyed without Hue 5Y or Redder Underlying Layer
- V Other (e.g., see p.91 of 2007 Supplement; explain in Remarks)

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

Restrictive Layer (if present)
Type: —
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. Waterdrained
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- 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)
- N Surface Soil Cracks (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")
- V Other (explain)

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- Drainage Patterns (B10) _____
- Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- Salt Deposits (C5)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- V Microtopographic Relief (D4) (caused by water)
- V FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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: Arctic NW Date: 9/10/12

Applicant/Owner: DOT & PF Sampling Point #: 93

Investigator(s): Mac S., Jay J Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.10575 Long. 157.84982 ± ' NAD 83 Recorded on GPS #: N Marked on map? AMB147 Field Map #: ____

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: Upland

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. wet HGM type: ____

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

Are Vegetation N, Soil N, or Hydrology ___ naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Willow thicket

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ____

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Lin bor	2		UPL	7. Pic glau	2		FACU
2. Vac uli	16		FAC	8.			
3. Ros acic	6		FACU	9.			
4. Bet nan	15		FAC	10.			
5. ~~Cal can~~				11.			
6. Sal rich	80	X	FACW	12.			

Total Sapling/Shrub Cover: 115

50% of total cover: 57.5 20% of total cover: 23

Herb Stratum

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

Total Herb Cover: 27

50% of total cover: 13.5 20% of total cover: 5.4

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

% Cover of Wetland Bryophytes ____% Total Cover of Bryophytes 60 %
(where applicable)

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	X1=	7
FACW species	80	X2=	160
FAC species	30	X3=	90
FACU species	8	X4=	32
UPL + NL species	2	X5=	10
Column Totals:	127 (A)		299 (B)

Prevalence Index = B/A = 2.35

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 Present? Yes X No ____

Remarks:

SOIL

Sampling Point #: 93

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
5-0	O									
0-8	B1	10YR3/2		—				sil	neg	
8-14	B2	2.5Y3/2		—				sil	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ✓ Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ✓ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ✓ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. B2 is same texture but much drier and crumbly
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ✓ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

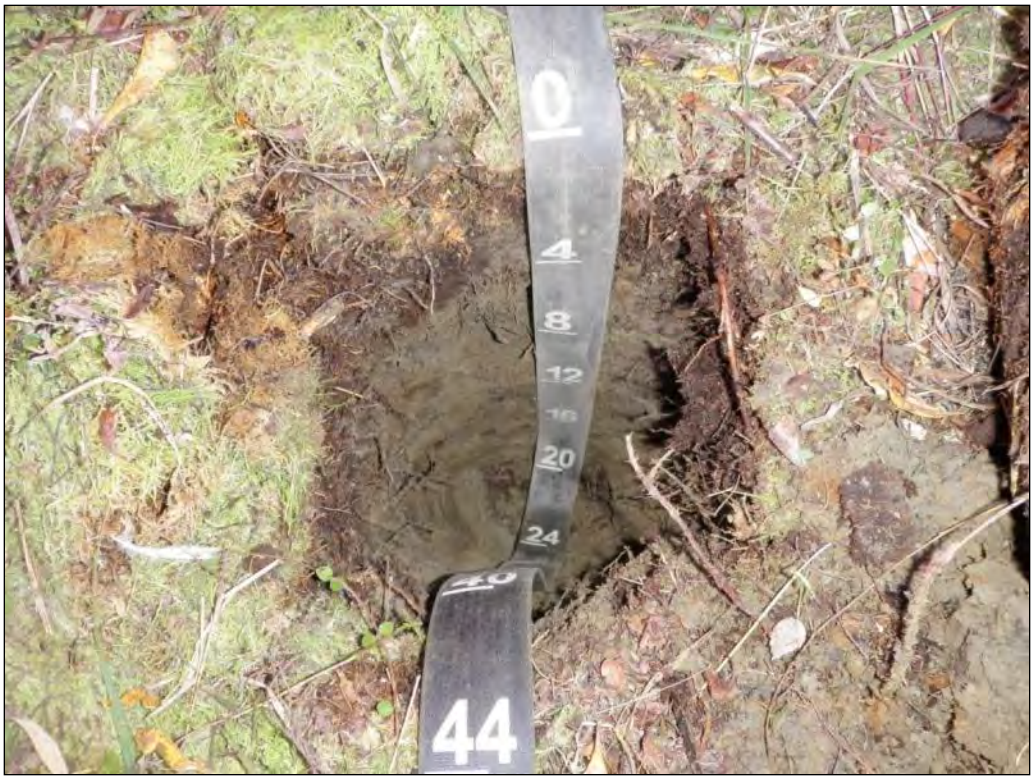
Seeping in at that depth but not yet filled?: ____

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

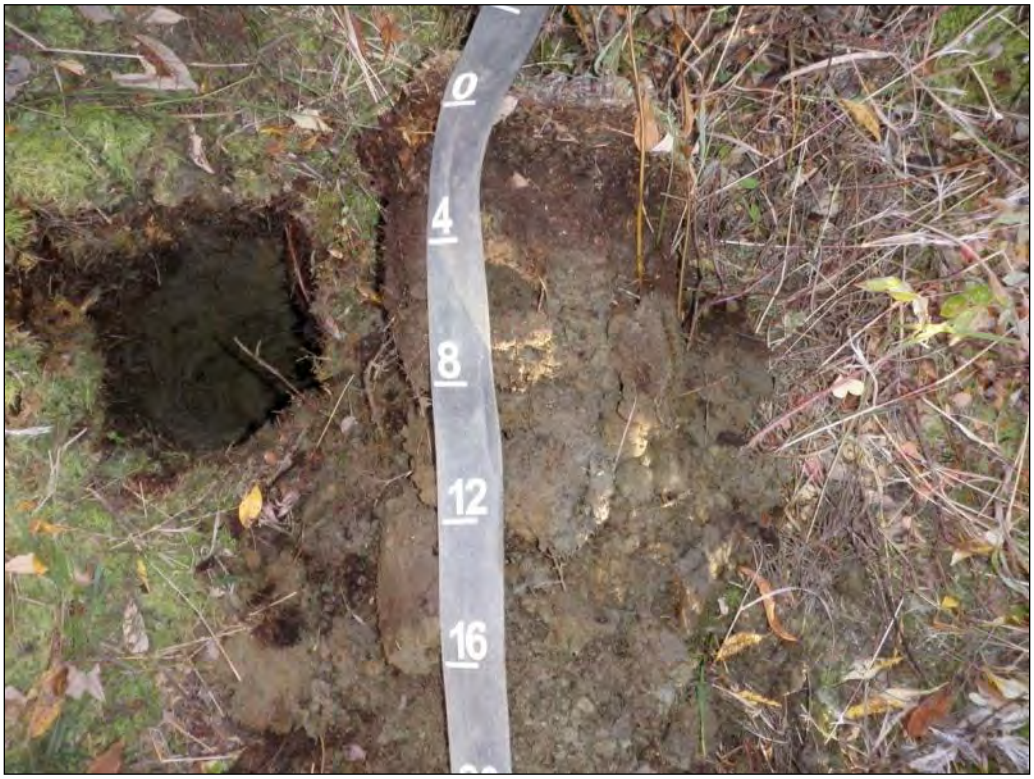
Wetland Hydrology Present? Yes ____ No X

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

Remarks:

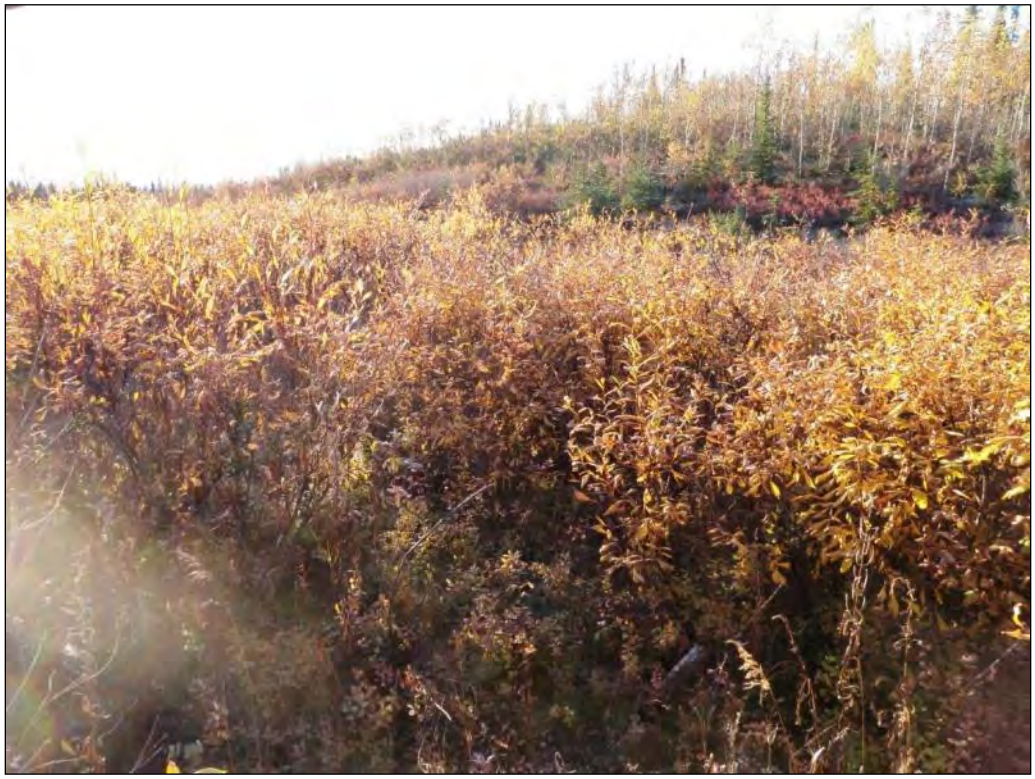


Site 93. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.



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

Project: Ambler Airport Borough/City: Arctic NW Date: 9/10/12

Applicant/Owner: DOT&PF Sampling Point #: 9495

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.11076 Long. 157.84811 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: —

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: gentle slope Slope (%): 1 Aspect: N

Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS1/4B

Photo nos./descriptions: 327-330 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: —

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

(Disturbed) shrub birch willow closed low

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

VEGETATION (Use scientific names.)

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ___

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

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

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Vacc uli	25	X	FAC	7.			
2. Bet nan	55	X	FAC	8.			
3. Pic mar	15		FACW	9.			
4. Sal pul	20		FAC	10.			
5. Led Dec	10		FACW	11.			
6. Emp nig	5		FAC	12.			

Total Sapling/Shrub Cover: 130

50% of total cover: 65 20% of total cover: 26

Herb Stratum

	Cov.%	Dom	Ind.		Cov.%	Dom	Ind.
1. Car big	10	X	FAC	12.			
2. Jun tri.	7	X	FACW	13.			
3. Pet Fr.	2		FACW	14.			
4. Equ var	3		FACW	15.			
5. Epi ang	1		FACW	16.			
6. Eri vag	10	X	FACW	17.			
7. Rub cha	1		FACW	18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 34

50% of total cover: 17 20% of total cover: 6.8

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

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	48	X2=	96
FAC species	115	X3=	345
FACU species	1	X4=	4
UPL + NL species	—	X5=	—
Column Totals:	164 (A)		445 (B)

Prevalence Index = B/A = 2.71

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 Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 95

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

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
8-4	Oi									
4-0	Oe									
0-12	B	10YR 3/1							pos	152 packets of organics

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **msr from top of mineral layers unless otherwise noted**):

- ___ Histosol or Histel (A1) (≥16",sat'd during wet period of growing season)
- X Histic Epipedon (A2)(8-16", sat'd, underlain by mineral soil with chroma ≤2)
- ___ Hydrogen Sulfide (A4) (w/in 12"of ground surface; @ ___" in this pit
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) ___

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) ___
- ___ Oxid'd Rhizospheres on Living Roots (C3) (w/in 12")
- X 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)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes X No ___ Depth **of** water (in.) 4
Water Table Present? Yes X No ___ Depth **to** water (in.) 13
Seeping in at that depth but not yet filled: ___
Saturation Present? Yes X No ___ Depth **to** sat. (in.) 2
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Remarks: Surface water in game trails adjacent to plot
Seeping in at 8"

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

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

Project: Ambler Airport Borough/City: Arctic Wo Date: 9/10/17
Applicant/Owner: DOT Sampling Point #: 95 Wo
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.11214 Long. -157.84624 ±___' NAD 83 Recorded on GPS #: ___ Marked on map? ___ Field Map #: AMB 154
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Slope Slope (%): 2 Aspect: N
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: PSS4B
Photo nos./descriptions: 331-334 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: ___ If no, explain. wetter HGM type: Slope
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Dwarf blueleaf spruce

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Shrub ~5%
~~Tree Stratum~~ (dbh≥ 3")

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

~~Total Tree Cover~~: ___

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Vacc vit	7		FAC	7.			
2. Vacc uli	20	X	FAC	8.			
3. Led dec	15		FACW	9.			
4. Emp nig	16		FAC	10.			
5. Pic mar	40	X	FACW	11.			
6. Bet nan	16		FAC	12.			

Total Sapling/Shrub Cover: 104
50% of total cover: 52 20% of total cover: 20.8

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Eri vag	5		FACW	12.			
2. Car big	30	X	FAC	13.			
3. Pyr asa	2		FACW	14.			
4. Pol fri	1		FACW	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 38
50% of total cover: 19 20% of total cover: 7.6

Circular 1/10-ac plot ___ or other plot dimension: ___ % of bare ground: —
% Cover of Wetland Bryophytes (where applicable) ___ % Total Cover of Bryophytes ~50 %

Remarks: Feather moss

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 65	X2= 130
FAC species 77	X3= 231
FACU species —	X4= —
UPL + NL species —	X5= —
Column Totals: 142 (A)	361 (B)

Prevalence Index = B/A = 2.54

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 Present? Yes X No ___

SOIL

Sampling Point #: 96

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
12-0	Oi									
0-8	B	10YR2/2						si l	pos	15% organic pockets
8+	permafrost									

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)
- X Histic Epipedon (A2) (8-16" organics, sat'd, underlain by mineral soil with chroma ≤2)
- X 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)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- X 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.) _____
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) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Project: Ambler Airport Borough/City: Arctic NW Date: 9/10/12
Applicant/Owner: DOT Sampling Point #: 99
Investigator(s): Mac S Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.11141 Long. -157.85129 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: —
Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: gentle slope Slope (%): 2 Aspect: NE
Local relief: Shape across slope: linear / convex / concave Shape up/downslope: linear / convex / concave NWI classification: Upland
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: X No: ___ If no, explain. wetter HGM type: —
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Betnan	65	X	FAC	7.			
2. Ledpal	40	X	FACW	8.			
3. Picmar	25		FAC	9.			
4. Vacvit	10		FAC	10.			
5. Picmar	6		FACW	11.			
6. Empnig	10		FAC	12.			

Total Sapling/Shrub Cover: 156
50% of total cover: 78 20% of total cover: 31.2

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Rubch	3		FACW	12.			
2. Equsyl	7	X	FAC	13.			
3. Carbig	10	X	FAC	14.			
4.				15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 20
50% of total cover: 10 20% of total cover: 4
Circular 1/10-ac plot Y or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes ___% Total Cover of Bryophytes ___%
(where applicable)

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species —	X1= —
FACW species 49	X2= 98
FAC species 127	X3= 381
FACU species —	X4= —
UPL + NL species —	X5= —
Column Totals: 176 (A)	479 (B)

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 99

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
7-0	O1									
0-2	A	10YR2/1						sil	neg	1&2 organic
2-5	B1	10YR4/1							neg	
5-13	B2	10YR4/4							neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. Organics phty. Moist from recent rain. Undecomposed. Other layers not moist at all.
2. May have spread organics from airport development over this area
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ____ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project: Anchor Airport Borough/City: Anchor NW Date: 9/10/17

Applicant/Owner: DOT Sampling Point #: 107

Investigator(s): Mac S., Jay J Firm: HDR Alaska, Inc.

Lat. (dec.°) 67 10 7 43 Long. 157.86426 ± ' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: _____

Subregion (circle one): SE Southcentral Western Aleutian Interior Northern Landform: Depression Slope (%): — Aspect: _____

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

Photo nos./descriptions: 357-360 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: ___ If no, explain: wetter HGM type: Dep

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

fresh sedge marsh surrounding PABR

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: _____

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Bet nan	3		FAC	7.			
2.				8.			
3.				9.			
4.				10.			
5.				11.			
6.				12.			

~~Total Sapling/Shrub Cover:~~ _____

~~50% of total cover:~~ _____ ~~20% of total cover:~~ _____

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Car ann	80	X	OBL	12.			
2. Hipp eul	2		OBL	13.			
3. Pot pal	5		OBL	14.			
4. Cal can	2		FAC	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 92

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

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

% Cover of Wetland Bryophytes _____ % Total Cover of Bryophytes 15 %

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 87	X1= 87
FACW species —	X2= —
FAC species 5	X3= 15
FACU species —	X4= —
UPL + NL species —	X5= —
Column Totals: 92 (A)	102 (B)

Prevalence Index = B/A = 1.11

Hydrophytic Vegetation Indicators:

X Dominance Test is>50%

X Prevalence Index is ≤3.0

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Water 20% *Herb stratum combined w/ Shrub <5%.

SOIL

Sampling Point #: 107

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

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

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- X Histosol or Histel (A1) (≥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)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: None
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- X High Water Table (A2) (w/in 12")
- X Saturation (A3) (w/in 12")
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- X 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)

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ___ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes X No ___ Depth of water (in.) 6
Water Table Present? Yes X No ___ Depth to water (in.) 0
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes Y No ___

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

Remarks: Depression adjacent to pond.

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

Project: Ambler Airport Borough/City: Arctic NW Date: 9/10/12
Applicant/Owner: DOT Sampling Point #: 108
Investigator(s): Mac S., Jan J. Firm: HDR Alaska, Inc. 150' from AMB 140
Lat. (dec.°) 67.10693 Long. 157.86372 ± ' NAD 83 Recorded on GPS #: N Marked on map? Y Field Map #:
Subregion (circle one): SE Southcentral Western Aleutian Interior (Northern) Landform: slope Slope (%): 2 Aspect: S
Local relief: Shape across slope: (linear) / convex / concave Shape up/downslope: (linear) / convex / concave NWI classification: Upland
Photo nos./descriptions: 361-364 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: ___ If no, explain. wetter HGM type: —
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

Species	Cov.%	Dom?	Ind.	Species	Cov.%	Dom?	Ind.
1. Pic mar	15	X	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Total Tree Cover: 15
50% of total cover: 7.5 20% of total cover: 3

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Betnan	15		FAC	7. Sal glau	3		FAC
2. Vacc vi	25	X	FAC	8. Led Dec	20	X	FACW
3. Emp nig	20	X	FAC	9.			
4. Pic glau	3		FACW	10.			
5. Pic mar	7		FACW	11.			
6. Vacc vit	8		FAC	12.			

Total Sapling/Shrub Cover: 101
50% of total cover: 50.5 20% of total cover: 20.2

Herb Stratum

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

Total Herb Cover: 9
50% of total cover: 4.5 20% of total cover: 1.8

Circular 1/10-ac plot ___ or other plot dimension: ___ % of bare ground: ___
% Cover of Wetland Bryophytes ___ % Total Cover of Bryophytes 80 %
(where applicable)

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	42	X2=	84
FAC species	80	X3=	240
FACU species	3	X4=	12
UPL + NL species	—	X5=	—
Column Totals:	125 (A)		336 (B)

Prevalence Index = B/A = 2.69

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 Present? Yes X No ___

Remarks: Reindeer trails 15%
Some sphagnum at dl slope part of plot 3%

SOIL

Sampling Point #: 108

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	Oi									
0-2	E	10YR4/1						sil	neg	
2-8	B1	10YR4/4	80					sil	neg	
		10YR5/1	20							
8-17	B2	10YR4/3						sil	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

- X 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)
- X Iron Deposits (B5)
- X Surface Soil Cracks (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")
- X Other (explain)

Secondary Indicators (at least 2 are required)

- X 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")
- X Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):

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

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

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

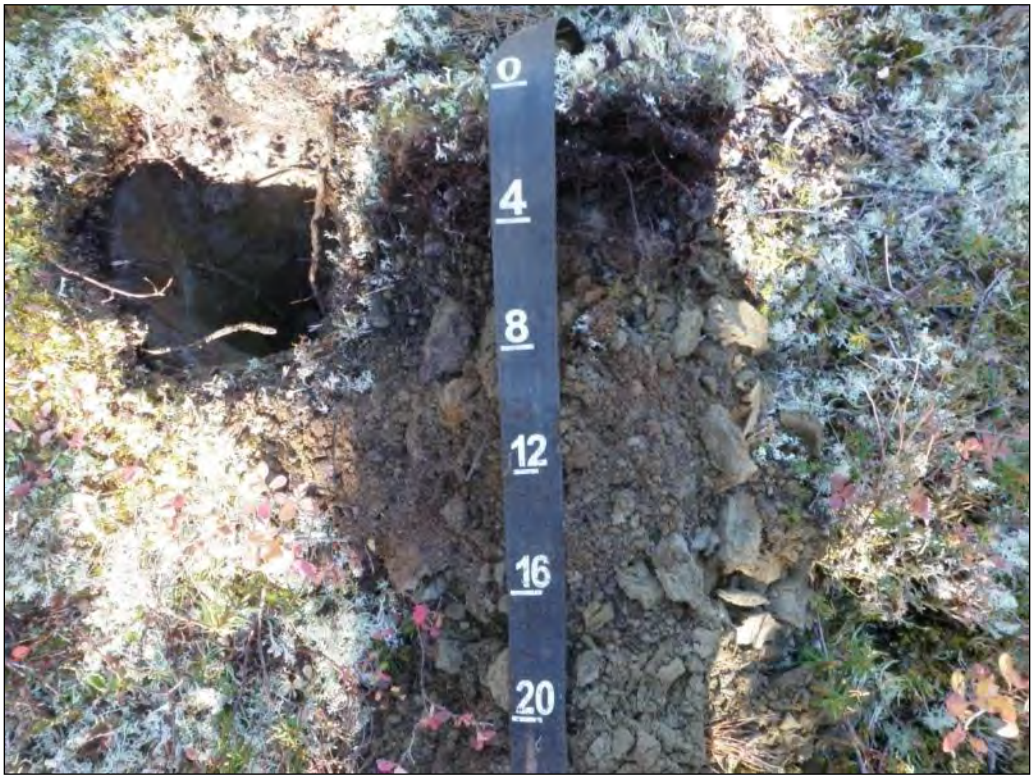
Saturation Present? Yes ____ No X Depth **to** sat. (in.) _____
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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 Airport Borough/City: Arctic NW Date: 9/10/12
Applicant/Owner: DOT Sampling Point #: 109
Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.
Lat. (dec.°) 67.10669 Long. -157.86340 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y 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: PFO4/SS4C
Photo nos./descriptions: 365- 368 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: ___ If no, explain. wetter HGM type: Flat
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

Black spruce woodland / scrub shrub wetland

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. Use 2012 indicator status.

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: 5
50% of total cover: 2.5 20% of total cover: 1.0

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pic mar	30	X	FACW	7. Vac vit	7		FAC
2. Emp nig	5		FAC	8.			
3. Vac vit	25	X	FAC	9.			
4. Bet nan	20		FAC	10.			
5. Led dec	20		FACW	11.			
6. Vac oxy	2		OBL	12.			

Total Sapling/Shrub Cover: 109
50% of total cover: 54.5 20% of total cover: 21.8

Herb Stratum

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

Total Herb Cover: 42
50% of total cover: 21 20% of total cover: 8.4

Circular 1/10-ac plot ___ or other plot dimension: _____ % of bare ground: —
% Cover of Wetland Bryophytes _____% Total Cover of Bryophytes 80 %
(where applicable) Feather

Remarks: Sphagnum 15% Lichen

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	X1=	2
FACW species	55	X2=	110
FAC species	77	X3=	231
FACU species	—	X4=	—
UPL + NL species	—	X5=	—
Column Totals:	134 (A)		343 (B)

Prevalence Index = B/A = 2.56

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 Present? Yes X No ____

SOIL

Sampling Point #: 109

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
10-5	Oi									
5-0	Oe									
0-6	B	10YR3/2		—				SiL	pos	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥16"organic surface, sat'd during wet period of growing season)
- X 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 (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: PD
Soil Map Unit Name: —

Hydric Soil Present? Yes X No ___

Comments:
1.
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X 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)
- ___ FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

Field Observations (in. from ground surface):
Surface Water Present? Yes X No ___ Depth of water (in.) 3
Water Table Present? Yes X No ___ Depth to water (in.) 3
Seeping in at that depth but not yet filled?: ___
Saturation Present? Yes X No ___ Depth to sat. (in.) 0
(includes capillary fringe) Epi Endo Unknown

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

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

Project: Ambler Airport Borough/City: Arctic NW Date: 9/10/12

Applicant/Owner: DOT Sampling Point #: 112

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.10581 Long. 157.85977 ±___' NAD 83 Recorded on GPS #: N Marked on map? Y Field Map #: ___

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: Upland

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ___

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Betpum	70	X	FAC	7. Sal rich	1		FACW
2. Ledpal	20		FACW	8.			
3. Vaculi	55	X	FAC	9.			
4. Empnig	5		FAC	10.			
5. Vacvit	10		FAC	11.			
6. Picmar	2		FACW	12.			

Total Sapling/Shrub Cover: 163

50% of total cover: 81.5 20% of total cover: 32.6

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Carbig	3		FAC	12.			
2. Calcan	5	X	FAC	13.			
3. Equsyl	10	X	FAC	14.			
4. Rubchi	2		FACW	15.			
5.				16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 20

50% of total cover: 16 20% of total cover: 4

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

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	X1=	—
FACW species	25	X2=	50
FAC species	158	X3=	474
FACU species	—	X4=	—
UPL + NL species	—	X5=	—
Column Totals:	183 (A)		524 (B)

Prevalence Index = B/A = 2.86

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 Present? Yes X No ___

Remarks:

SOIL

Sampling Point #: 112

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
0-3	A	10YR3/1						sil	neg	
3-12	B	10YR3/2						sil	neg	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ____ Histosol or Histel (A1) (≥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)
- ____ Alaska Gleyed (A13)
- ____ Alaska Redox (A14)
- ____ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ____ Alaska Color Change[4] (TA4)
- ____ 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)

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

Restrictive Layer (if present)
Type: none
Depth (inches) _____

Drainage Class: WD
Soil Map Unit Name:

Hydric Soil Present? Yes ____ No X

Comments:
1. 8" organics but not saturated. Extremely wet conditions right now to not be saturated
2. remaining soil is dry and brown
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- N Water-Stained Leaves (B9)
- ____ Drainage Patterns (B10) _____
- ____ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- ____ Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ____ Salt Deposits (C5)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3) (w/in 24", can perch 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):

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

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

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

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

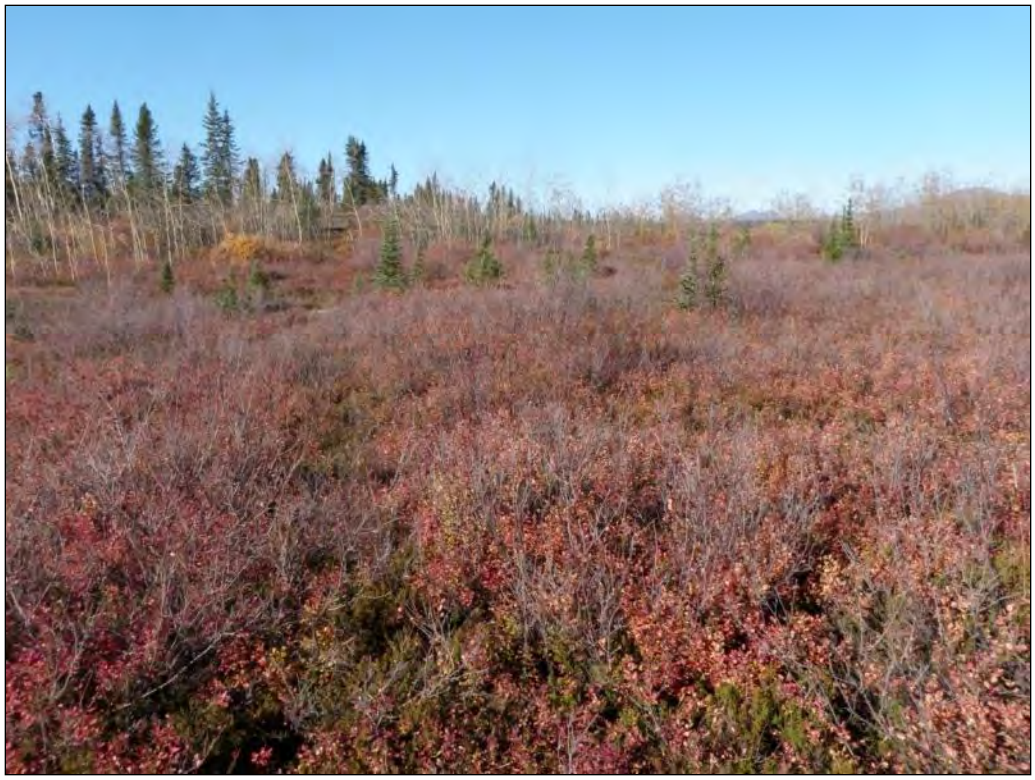
Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project: Ambler Airport Borough/City: Arctic NW Date: 9/10/12

Applicant/Owner: DOT Sampling Point #: 115

Investigator(s): Mac S., Jay J. Firm: HDR Alaska, Inc.

Lat. (dec.°) 67.10793 Long. 157.86207 ±___' NAD 83 Recorded on GPS #: Y Marked on map? Y Field Map #: —

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

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

Photo nos./descriptions: 382-385 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: ___ If no, explain. wetter HGM type: depression

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

Are Vegetation N, Soil N, or Hydrology N naturally problematic? If needed, explain answers here.

SUMMARY OF FINDINGS

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

VEGETATION (Use scientific names.) Estimate absolute % cover (not relative cover). % can total >100%. **Use 2012 indicator status.**

Tree Stratum (dbh≥ 3")

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

Total Tree Cover: ___

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

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

	Abs.Cov.%	Dom?	Ind.		Abs.Cov.%	Dom?	Ind.
1. Pic gla	2		FACU	7.			
2.				8.			
3.				9.			
4.				10.			
5.				11.			
6.				12.			

~~Total Sapling/Shrub Cover:~~ ___

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

Herb Stratum

	Abs.Cov.%	Dom?	Ind.		Abs. Cov.%	Dom?	Ind.
1. Rub arc	20		FAC	12.			
2. Cal can	80	X	FAC	13.			
3. Car utr	15		OBL	14.			
4. Epi ang	2		FACU	15.			
5. Equ syl	10		FAC	16.			
6.				17.			
7.				18.			
8.				19.			
9.				20.			
10.				21.			
11.				22.			

Total Herb Cover: 129

50% of total cover: 64.5 20% of total cover: 25.8

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

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

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	X1=	15
FACW species	12	X2=	—
FAC species	110	X3=	330
FACU species	4	X4=	16
UPL + NL species	—	X5=	—
Column Totals:	129 (A)		345 (B)

Prevalence Index = B/A = 2.67

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 Present? Yes X No ___

Remarks: Depression surrounded by uplands. Likely caused by fill impounding water

* Shrub combined w/ Herb stratum < 5%.

SOIL

Sampling Point #: 115

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

Depth (in.)	Horizon (opt.)	Soil Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	α,α dip. (pos/neg)	Remarks (or use comment number)
3-0	O1									
0-8		10YR 3/1						sil	pos	
8-17		7.5YR 3/4	20					sil	neg	
		2.5Y 5/2	80							

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, CS=Coated Sand Grains [2]Location: PL = Pore Lining, RC = Root Channel, M = Matrix

Hydric Soil Indicators (check ones that apply, **measure from top of mineral layers unless otherwise noted**):

Standard Indicators:

- ___ Histosol or Histel (A1) (≥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)
- X Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change[4] (TA4)
- ___ 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)

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

Restrictive Layer (if present)
Type: _____
Depth (inches) _____

Drainage Class:
Soil Map Unit Name:

Hydric Soil Present? Yes X No ___

Comments:
1. Very dry soil
2.
3.

HYDROLOGY

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

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (at least 2 are required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10) _____
- ___ Oxid'd Rhizospheres on Living Roots (C3) (within 12")
- X Presence of Reduced Iron (C4) (pos. α,α or soil color change w/in 12")
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3) (w/in 24", can perch H2O w/in 12")
- ___ Microtopographic Relief (D4) (caused by water)
- X FAC Neutral Test (D5) (# OBL+FACW dominants > # FACU+UPL dominants)

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: Water must pond here during breakup.

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.

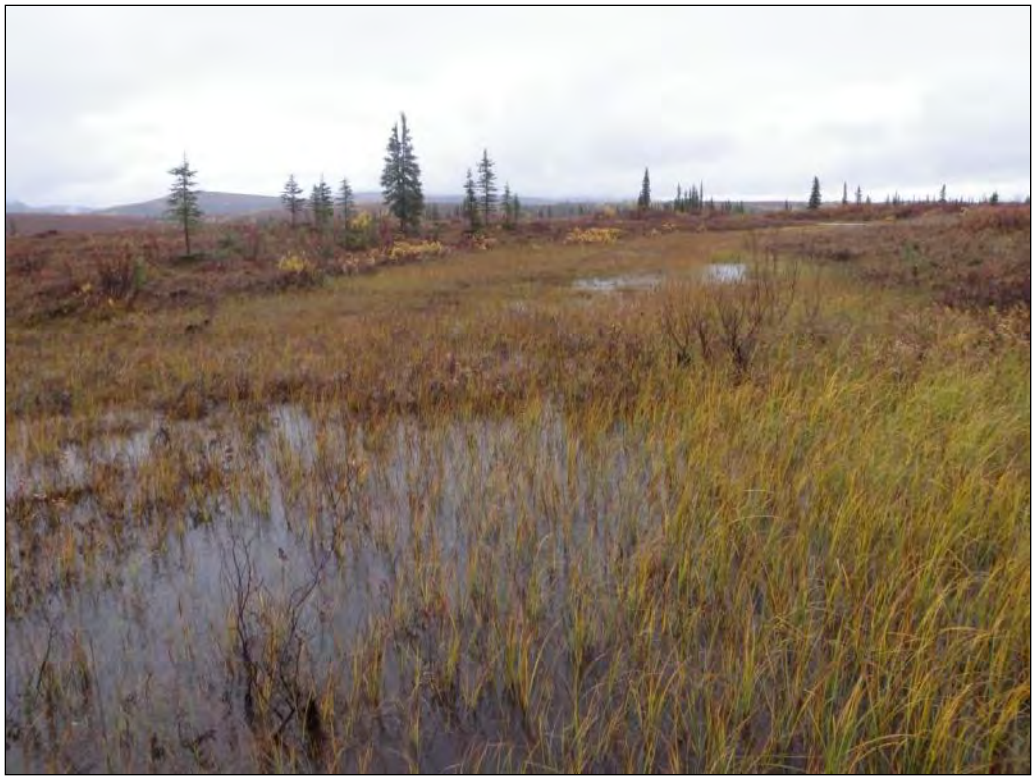
Site 11. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.

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

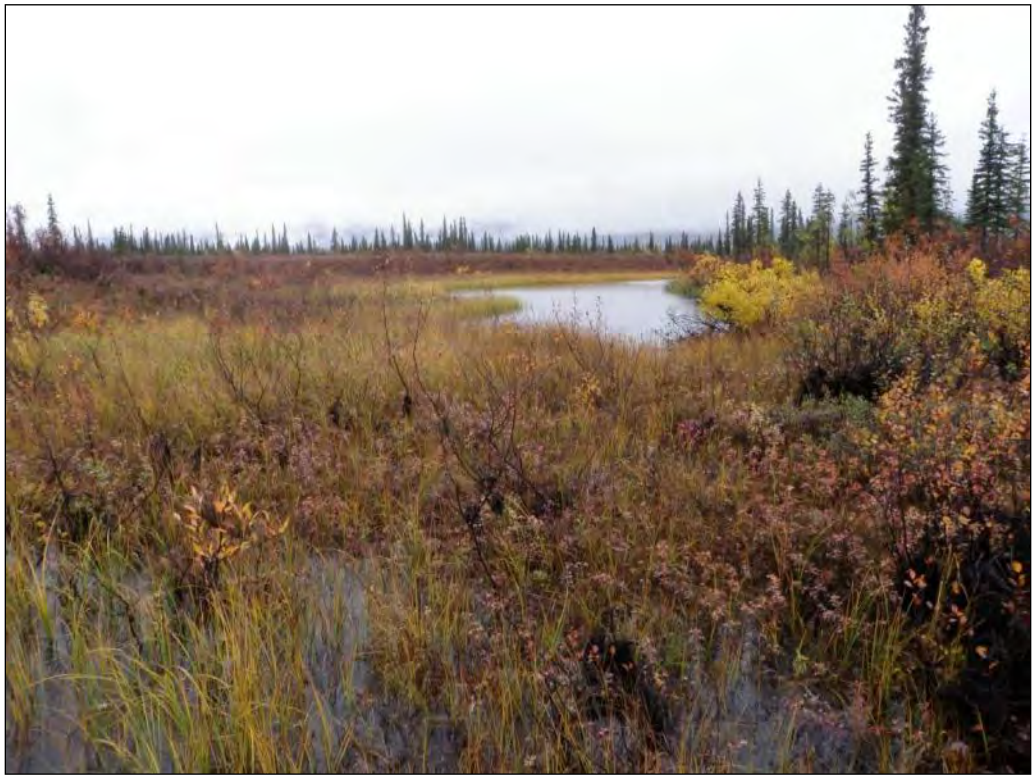
Site 14. Ambler Airport Improvements Wetland Investigation. Taken September 6, 2012.

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.

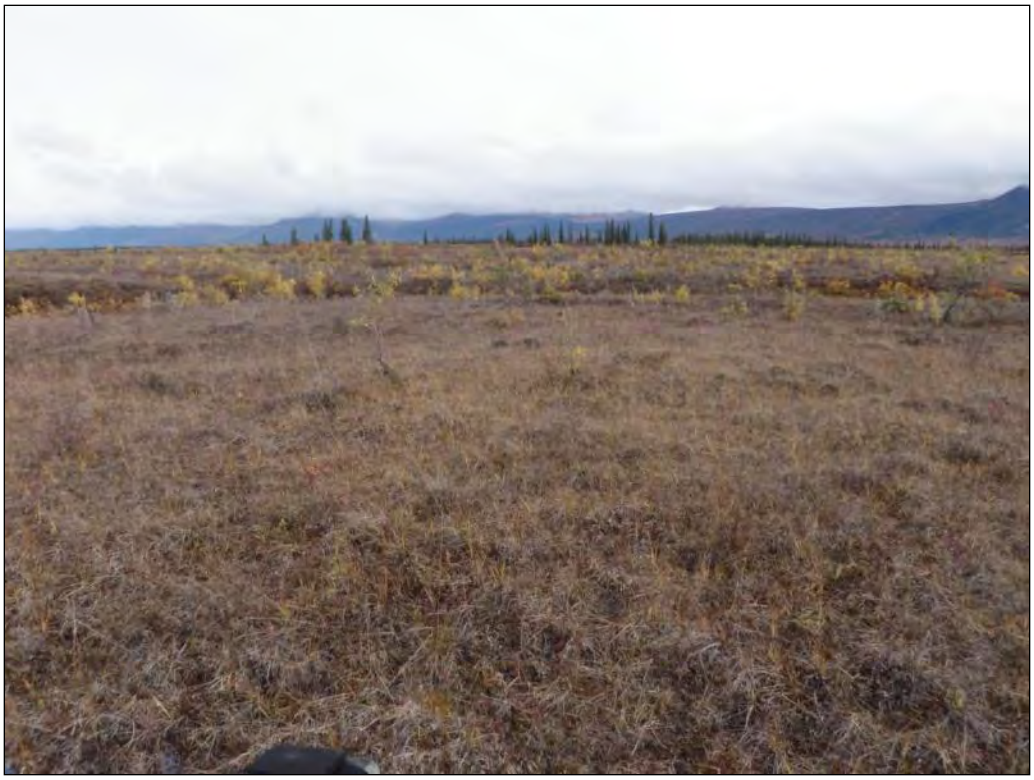
Site 25. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.

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.

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

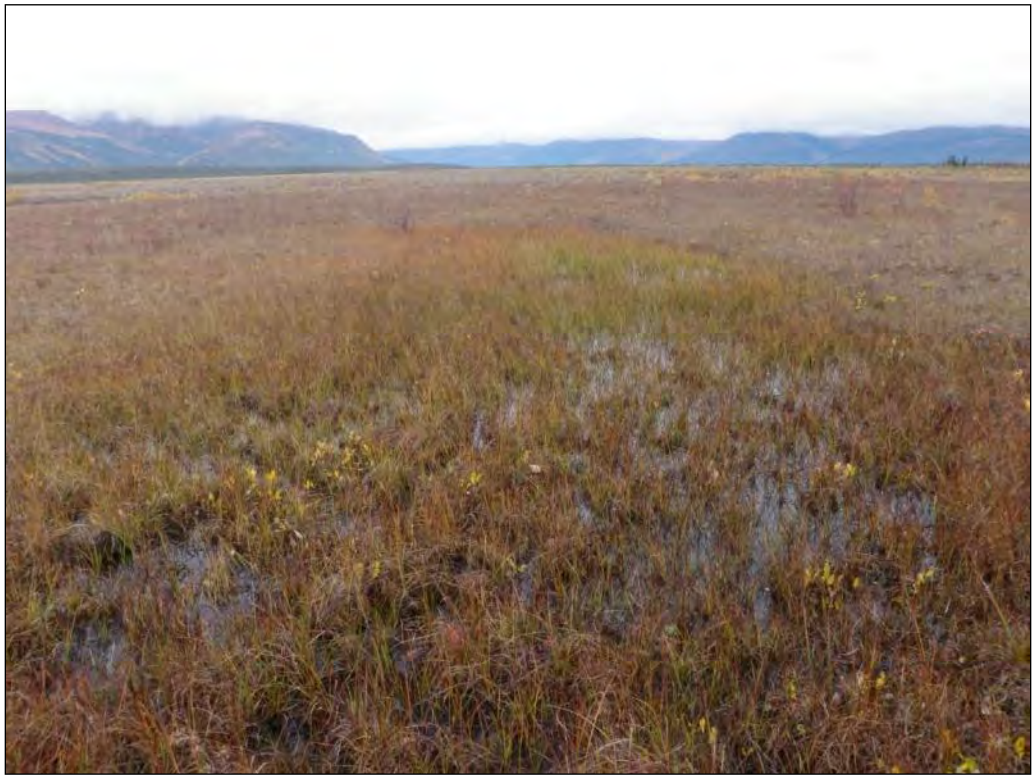
Site 30. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.

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

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

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

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.

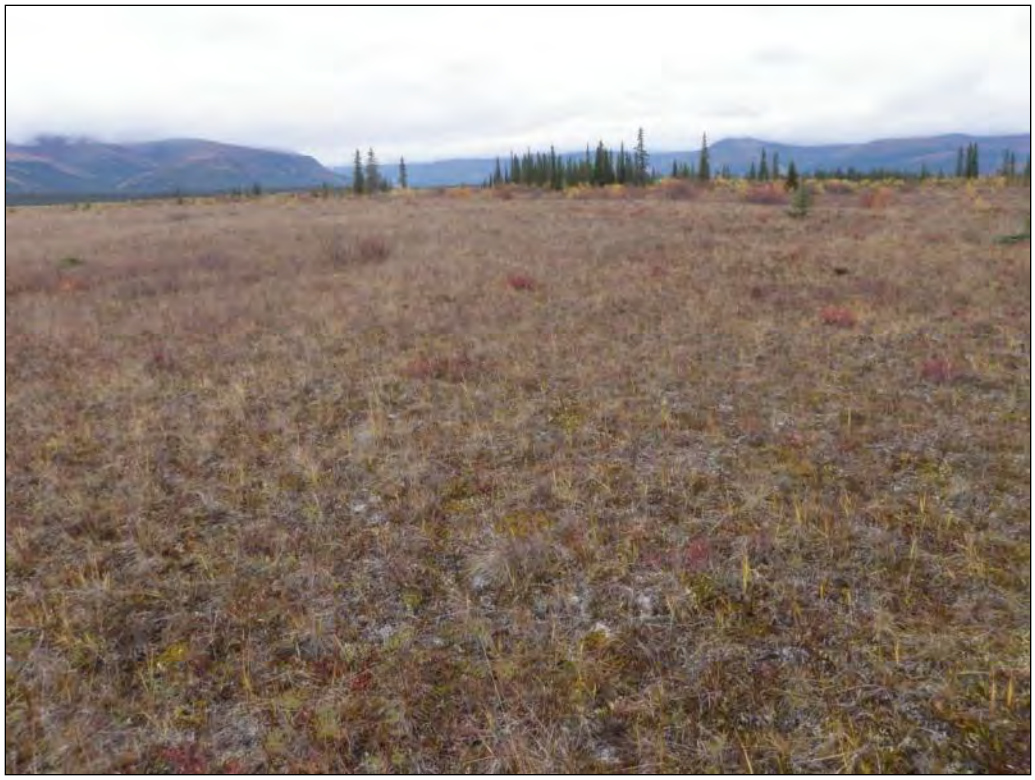
Site 36. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.

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

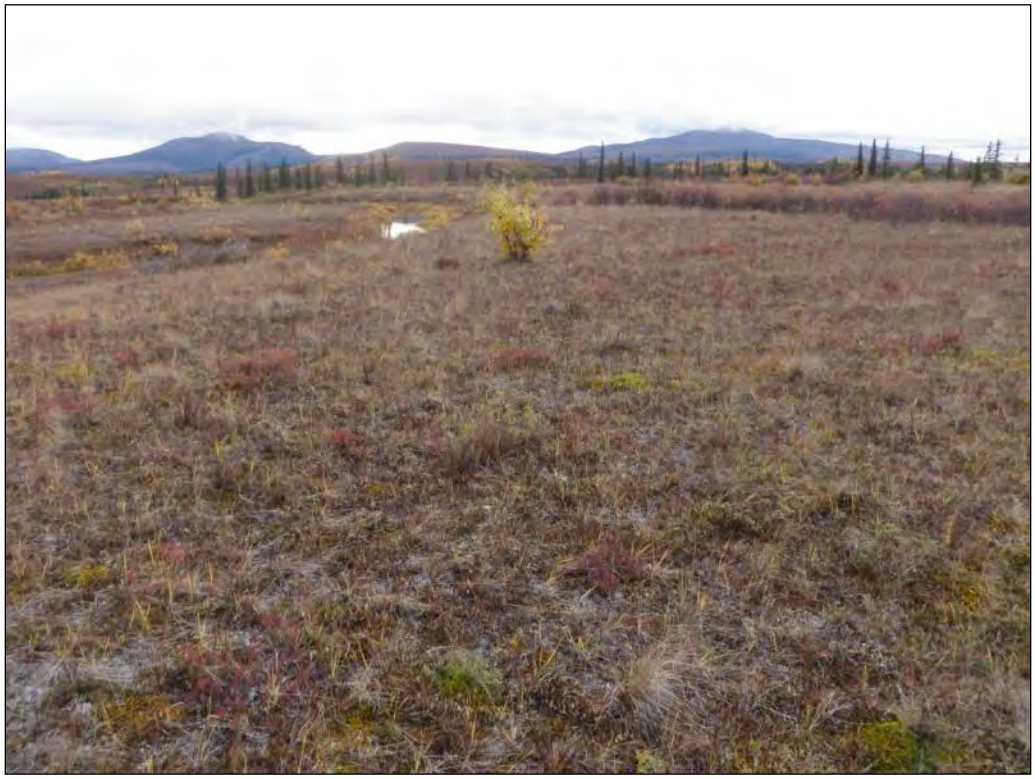
Site 37. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.

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

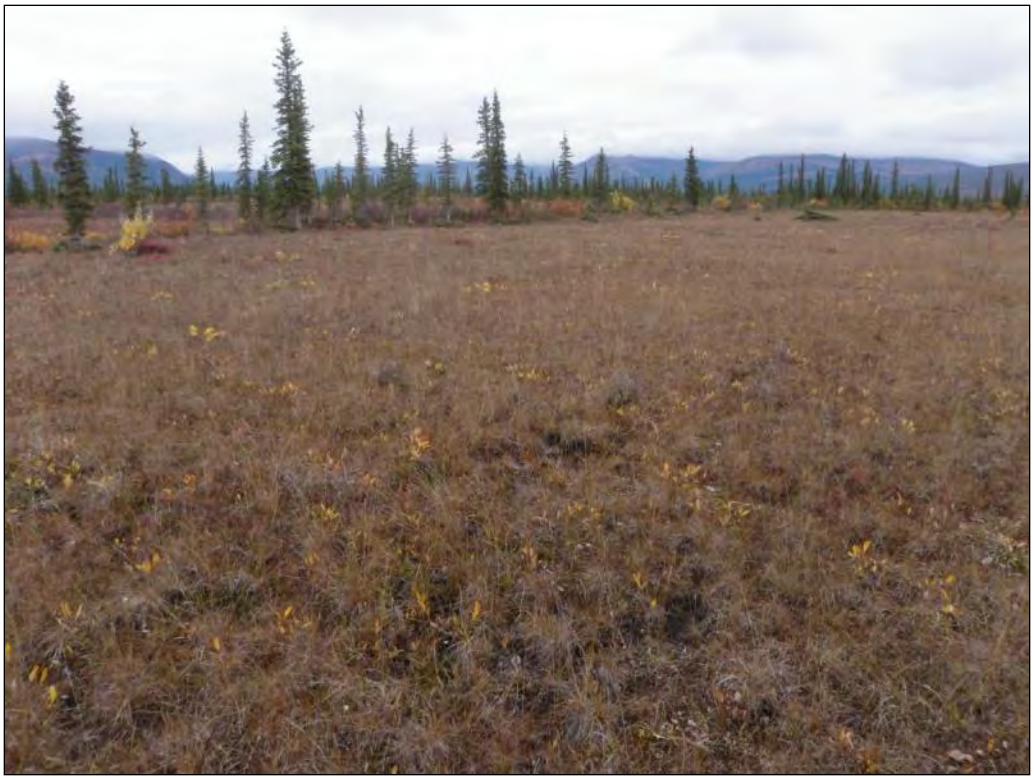
Site 38. Ambler Airport Improvements Wetland Investigation. Taken September 7, 2012.



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.

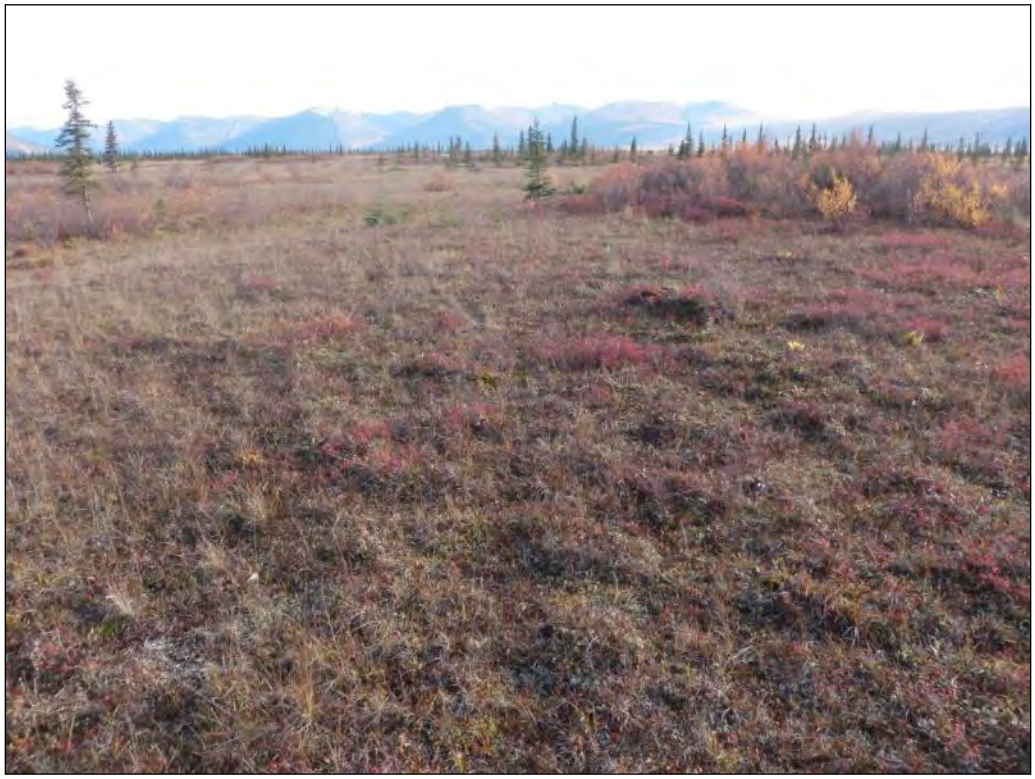
Site 41. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.

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

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

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

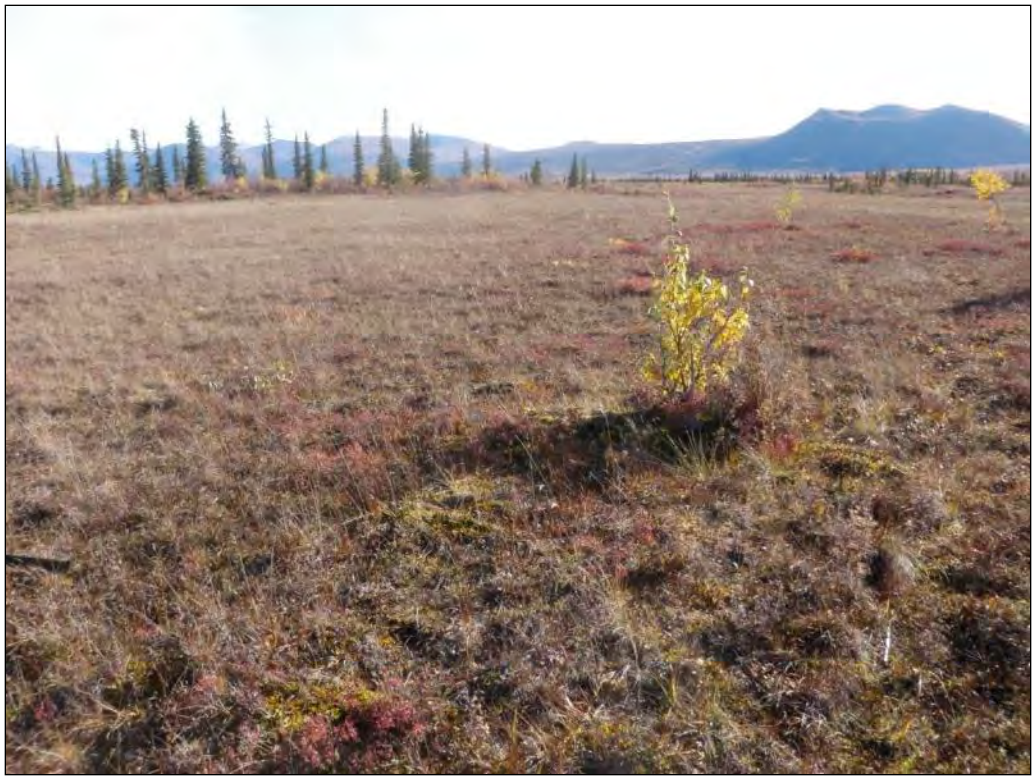
Site 46. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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

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

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



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

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

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

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

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

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

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

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

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

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

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

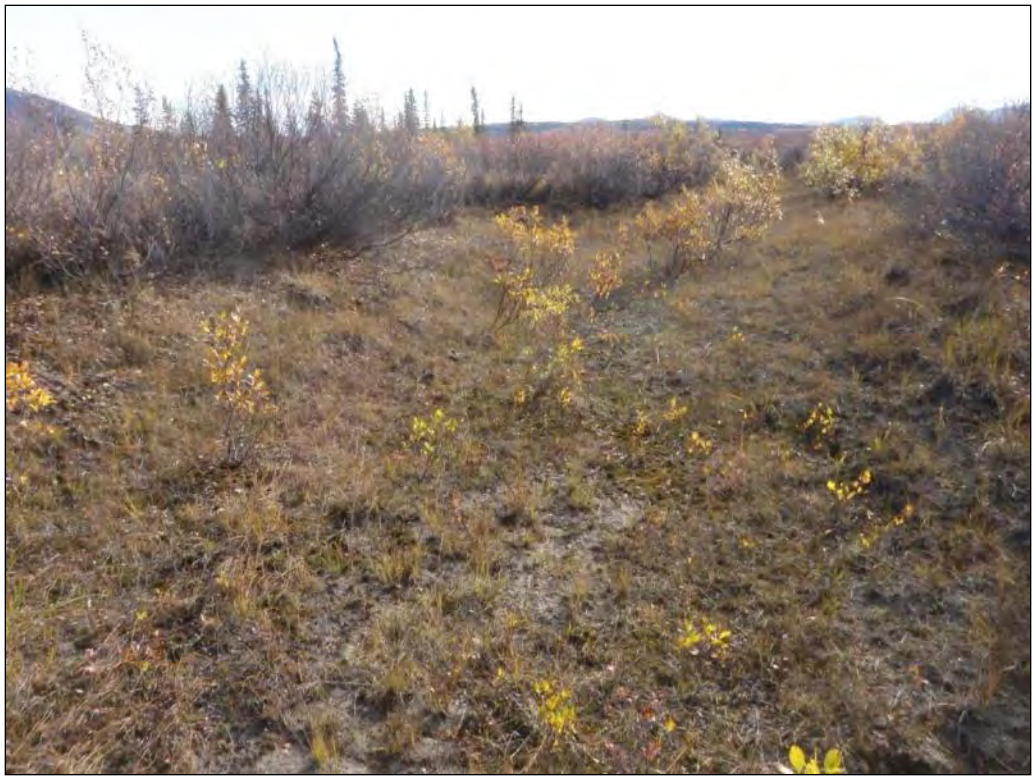
Site 54. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.

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

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

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

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



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

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

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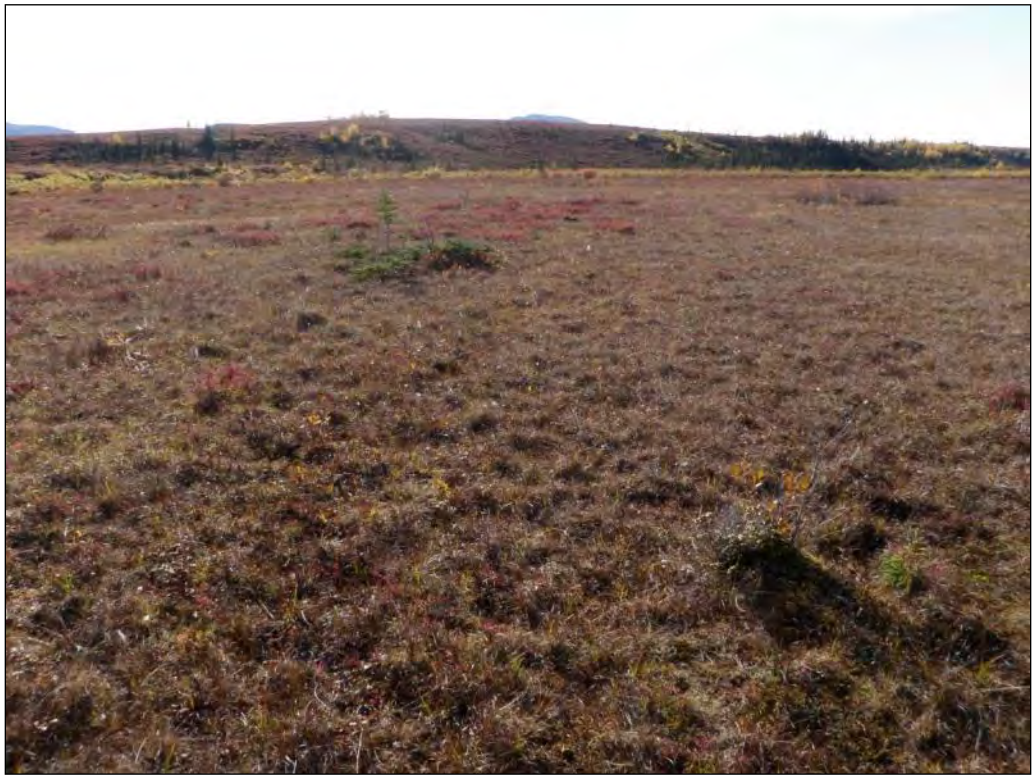
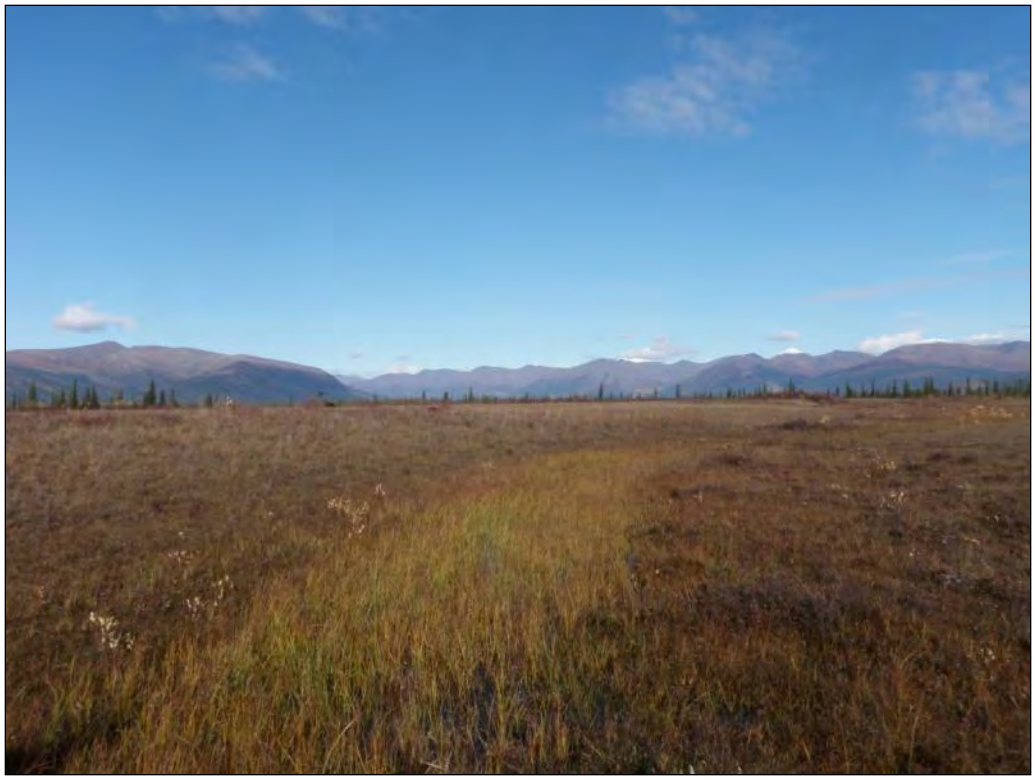


Site 67. Ambler Airport Improvements Wetland Investigation. Taken September 8, 2012.



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

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

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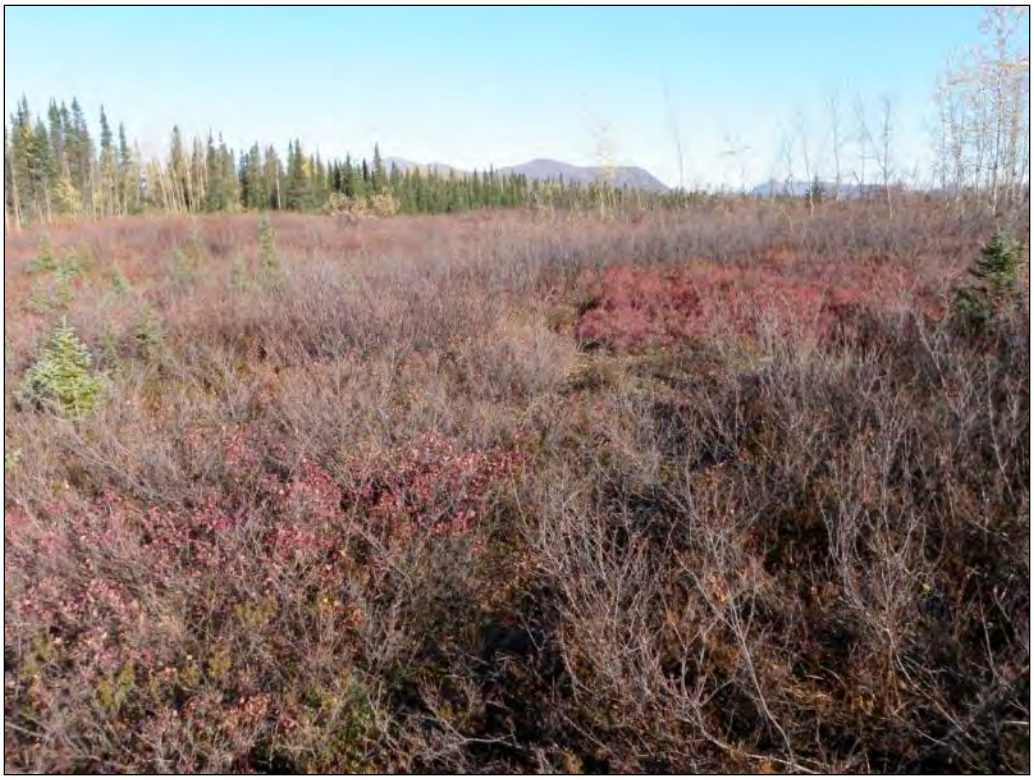

Site 100. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.

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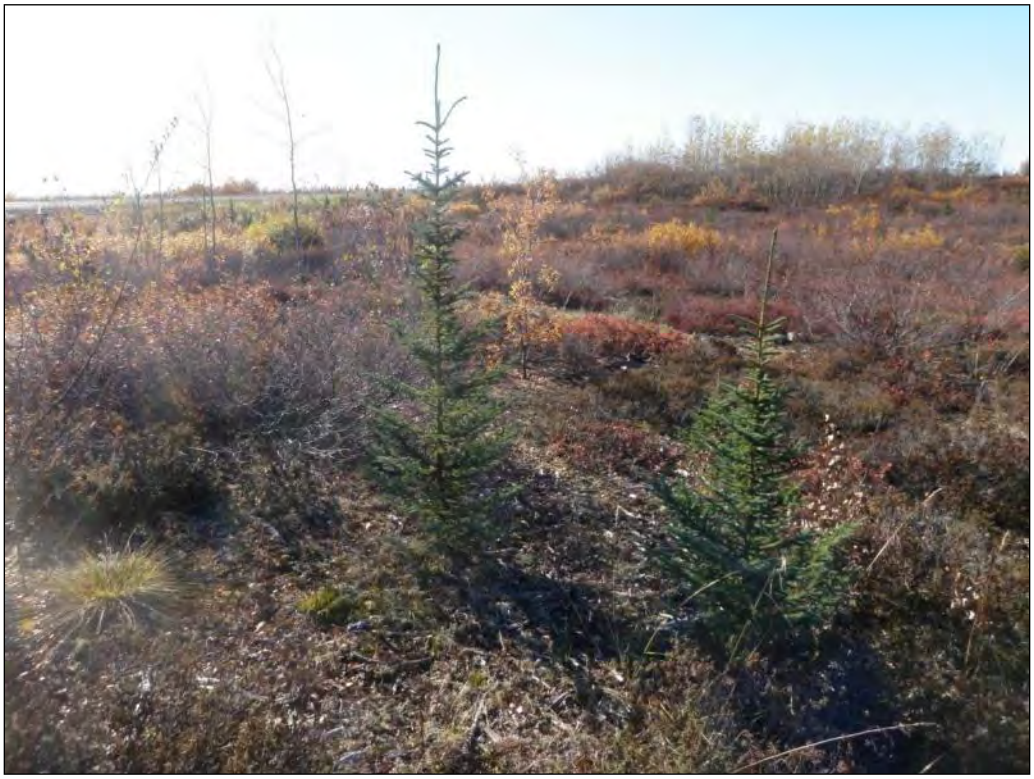

Site 101. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.

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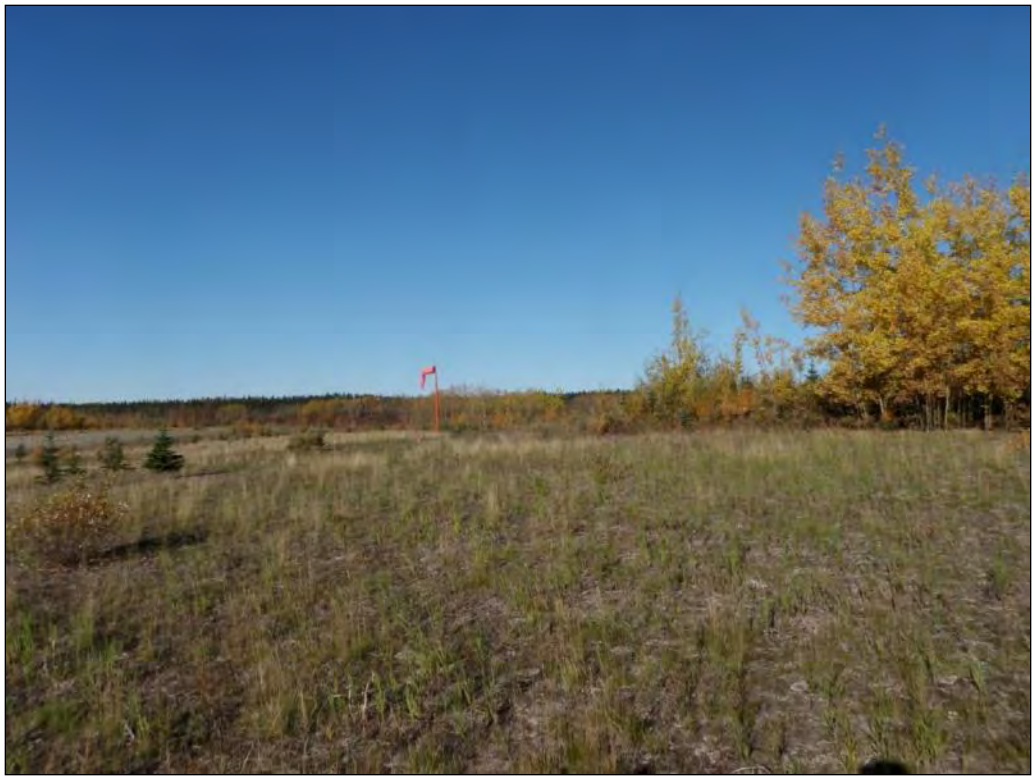

Site 103. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.

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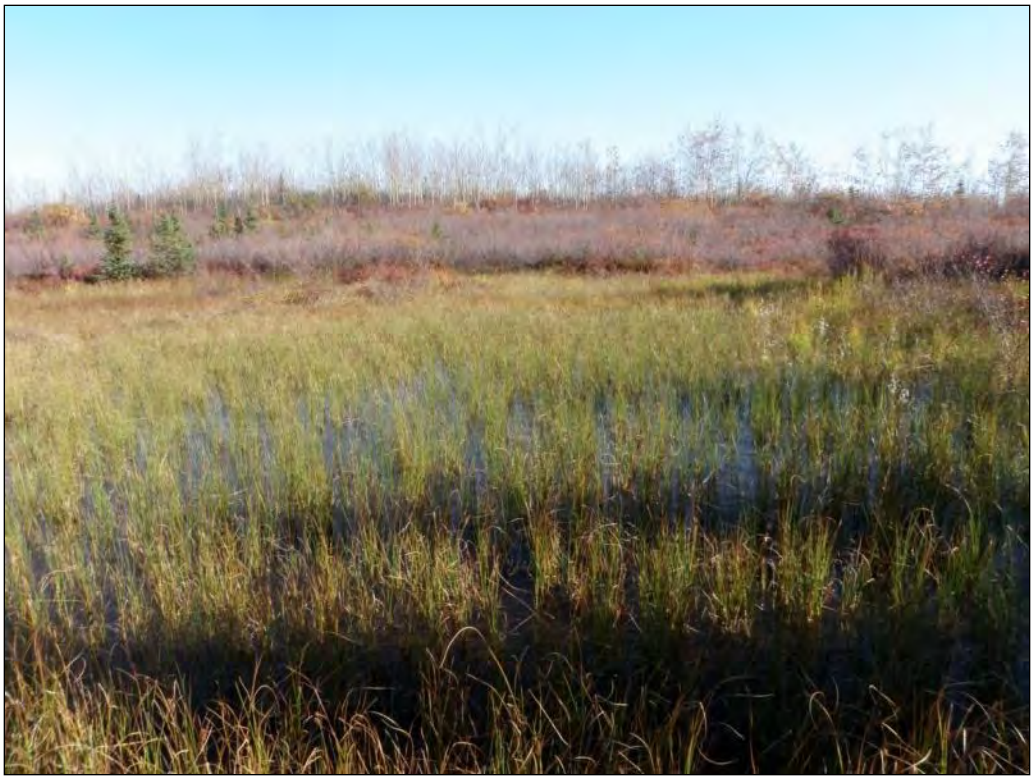

Site 111. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.

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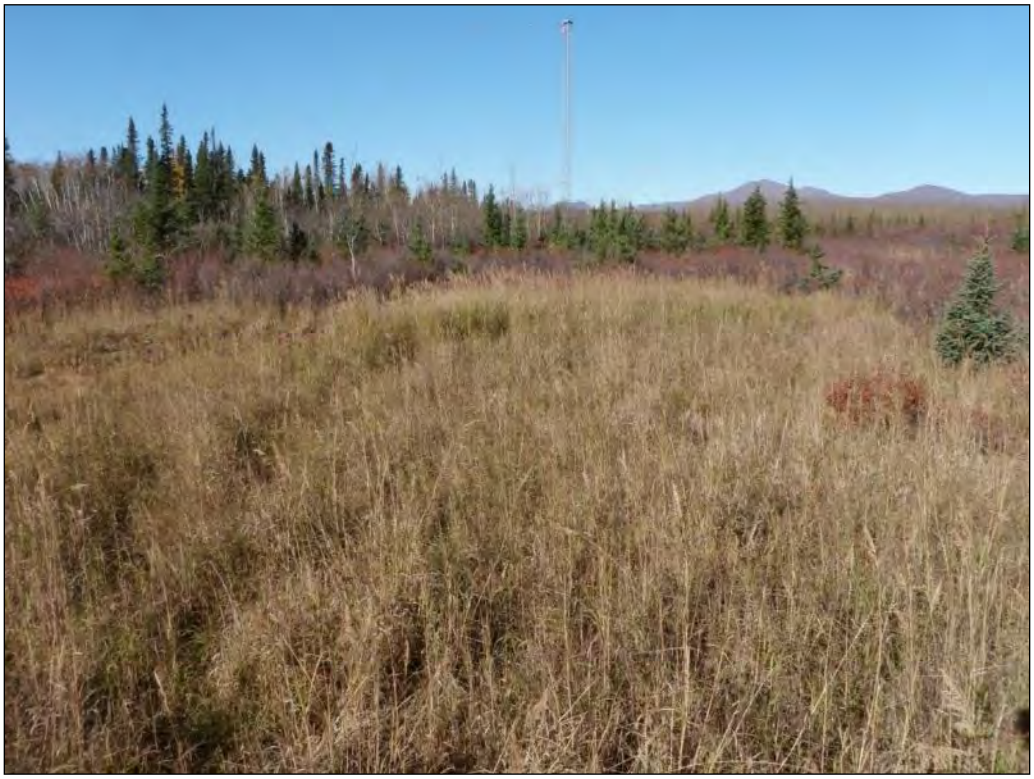

Site 113. Ambler Airport Improvements Wetland Investigation. Taken September 10, 2012.

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