

Appendix E

Wetland Delineation Reports and USACOE Correspondence

Wetland Delineation Reports Table of Contents

Takotna Airport Master Plan. Wetland Delineation and Wetland Functional Assessment. 2002.

Jurisdictional Determination Letter from Mary Leykom, Department of the Army, Corps of Engineers' Regulatory Branch – North Section to Mark Mayo, Alaska Department of Transportation and Public Facilities, Planning Department.

Takotna Airport Master Plan. Proposed Material Sites Preliminary Jurisdictional Determination. March 2005.

Jurisdictional Determination Letter from Marcia Heer, Department of the Army, Corps of Engineers' Regulatory Branch – North Section to Bill Ballard, Alaska Department of Transportation and Public Facilities, Planning Department.



REPLY TO ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-0898

18 NOV 2005

Regulatory Branch
North Section
POA-2002-491-9

RECEIVED

NOV 25 2005

Stwd. Design & Eng. Svcs
Director's Office

Date:	11/18/05	
Proj. #	56774	
Preliminary Design & Environmental	PR	DF
Section Chief		
Project Manager		X
Env. Coordinator	1	
Env. Technical Leader		X
Env. Analyst		
Project File	2	
Central File		X

Mr. Bill Ballard
Alaska Department of Transportation
and Public Facilities
Post Office Box 196900
Anchorage, Alaska 99519-6900

Dear Mr. Ballard:

This is in response to your November 1, 2005, request for a Department of the Army (DA) jurisdictional determination concerning your proposed project located within sections 34-37, T. 34 N., R. 15 E., Kateel River Meridian, in Takotna, Alaska. The proposed project involves the use of material sites associated with relocation of the Takotna Airport.

We concur with the March 2005 wetland delineation prepared by HDR Alaska, Inc. and based on our review of the information you furnished and information available to our office, we have determined that the above property contains wetlands under Corps regulatory jurisdiction (see enclosure titled, "JURISDICTIONAL DETERMINATION"). Therefore, issuance of an individual DA permit is required prior to conducting your proposed work.

Your proposed project was reviewed pursuant to Section 404 of the Clean Water Act. Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work (33 U.S.C. 1344).

For regulatory purposes, the Corps of Engineers defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Please be advised that land clearing operations involving vegetation removal with mechanized equipment such as front-end loaders, backhoes, or bulldozers with shear blades, rakes, or discs in wetlands; or windrowing of vegetation, land leveling, or other soil disturbances are considered placement of fill material under our jurisdiction.

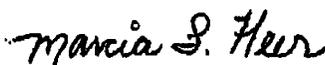
This approved jurisdictional determination is valid for a period of five (5) years from the date of this letter, unless new information supporting a revision is provided to this office before the expiration date. Also, enclosed is a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this DA Approved Jurisdictional Determination.

-2-

Nothing in this letter shall be construed as excusing you from compliance with other Federal, State, or local statutes, ordinances, or regulations that may affect any proposed work.

We appreciate your cooperation with the Corps of Engineers' Regulatory Program. Please refer to file number POA-2002-491 in future correspondence or if you have any questions concerning this determination. You may contact me by mail at the letterhead address, ATTN: Marcia L. Heer, CEPOA-CO-R-N, at (907) 753-5646, or by email at marcia.l.heer@poa02.usace.army.mil. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,



Marcia L. Heer
Regulatory Specialist

Enclosure(s)

Copies Furnished: WITHOUT enclosures
Fairbanks Agencies

Project Coordinator
Office of Management and Budget
Division of Governmental Coordination
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U.S. Fish and Wildlife Service
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101 12th Avenue, Box 19, Room 110
Fairbanks, Alaska 99701-6267

Western Alaska Ecological Supervisor
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Ms. Judith Bittner
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Alaska Department of Natural Resources
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Fairbanks, Alaska 99709-4699

Mr. Robert F. McLean
Habitat Biologist
Alaska Department of Natural Resources
Office of Habitat Management and Permitting
1300 College Road
Fairbanks, Alaska 99701-1551

Alaska Operations Office
Environmental Protection Agency
222 West Seventh Avenue, # 19
Anchorage, Alaska 99513-7588

JURISDICTIONAL DETERMINATION
U.S. Army Corps of Engineers

DISTRICT: Alaska
FILE NUMBER: POA-2002-491, Materials Site

PROJECT LOCATION INFORMATION:

State: AK
Borough:
Center coordinates of site (lat/long in degree decimal format): Lat. 62.9872° N., Long. 156.0441° W.; Sec.34-37, T.34N, R.15E, KRM
Approximate size of area (parcel) reviewed, including uplands: 57.2 acres.
Name of nearest waterway: Takotna River

JURISDICTIONAL DETERMINATION

Method: Office determination
Onsite determination
Date Form Completed: 11/15/05

Jurisdictional Determination (JD):

- Preliminary JD - Based on available information, there appear to be (or) there appear to be no "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).
- Approved JD - An approved JD is an appealable action (Reference 33 CFR part 331).
Check all that apply:
 - There are "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area.
Approximate size of jurisdictional area:
 - There are "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area.
Approximate size of jurisdictional area: 18 acres.
 - There are "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area.
 Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

- A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":
 - The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
- B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":
 - (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
 - (2) The presence of interstate waters including interstate wetlands.
 - (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):
 - (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.
 - (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 - (iii) which are or could be used for industrial purposes by industries in interstate commerce.
 - (4) Impoundments of waters otherwise defined as waters of the US.
 - (5) The presence of a tributary to a water identified in (1) - (4) above.
 - (6) The presence of territorial seas.
 - (7) The presence of wetlands adjacent² to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above). *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:* The proposed project is located in wetlands connected to the Takotna River, a water of the U.S. Takotna River is a tributary to the Kuskokwim River, a navigable water of the U.S.

DISTRICT: Alaska
FILE NUMBER: FOA-2002-491, Materials Site

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329)

Ordinary High Water Mark indicated by:

- clear, natural line impressed on the bank
- the presence of litter and debris
- changes in the character of soil
- destruction of terrestrial vegetation
- shelving
- other:

High Tide Line indicated by:

- oil or scum line along shore objects
- fine shell or debris deposits (foreshore)
- physical markings/characteristics
- tidal gages
- other:

Mean High Water Mark indicated by:

- survey to available datum; physical markings; vegetation lines/changes in vegetation types.

To the limit of the wetland boundaries

Bars For Not Asserting Jurisdiction:

The reviewed area consists entirely of uplands.

Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).

Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).

The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:

- Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
- Artificially irrigated areas, which would revert to upland if the irrigation ceased.
- Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
- Isolated, intrastate wetland with no nexus to interstate commerce.
- Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
- Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
- Other (explain):

DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):

Maps, plans, plots or plat submitted by or on behalf of the applicant.

Data sheets prepared/submitted by or on behalf of the applicant.

This office concurs with the delineation report, dated November 1, 2005, prepared by (company): HDR Alaska, Inc.

This office does not concur with the delineation report, dated _____, prepared by (company): _____

Data sheets prepared by the Corps

Wetland boundary map prepared by the Corps

Alaska District's Approved List of Navigable Waters

U.S. Geological Survey Hydrologic Atlas:

U.S. Geological Survey 7.5 Minute Topographic maps:

U.S. Geological Survey 15 Minute Topographic maps:

USDA Natural Resources Conservation Service Soil Survey:

National wetlands inventory maps:

State/Local wetland inventory maps:

FEMA/FIRM maps (Map Name & Date):

100-year Floodplain Elevation is: _____ (NGVD)

Aerial Photographs (Name & Date):

Other photographs (Date):

Advanced Identification Wetland maps:

Site visit [Date(s)]:

Previous determination(s) [File number and date of response letter]:

Applicable/supporting case law:

Other information (please specify):

Marcia L. Fleer 11-15-05

Signature

Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

Applicant: Alaska Department of Transportation/Public Facilities		File Number: POA-2002-491	Date: 18 NOV 2005
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the District Engineer. Your objections must be received by the District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or, (c) not modify the permit, having determined that the permit should be issued as previously written. After evaluating your objections, the District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the Preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

If you have questions regarding this decision and/or the appeal process you may contact:

Marla L. Heer, RS
 Alaska District Corps of Engineers
 CEPOA-CO-R-N
 P.O. Box 6898
 Elmendorf AFB, AK 99506-6898
 (907) 753-2712
 (800) 478-2712 (toll free in AK)

If you only have questions regarding the appeal process you may also contact:

Commander
 ATTN: ET-C/Michael Lee
 USAED, Pacific Ocean
 Building 230
 Fort Shafter, HI 96858-5440

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:
----------------------------------	-------	-------------------

Mail to:

Commander
 ATTN: ET-C/Michael Lee
 USAED, Pacific Ocean
 Building 230
 Fort Shafter, HI 96858-5440

Takotna Airport Master Plan

Proposed Material Sites Preliminary Jurisdictional Determination

Prepared for:



Alaska Department of
Transportation & Public Facilities

Prepared by:
HDR Alaska, Inc.
2525 C Street, Suite 305
Anchorage, Alaska 99503

March 2005

1.0 Introduction and Purpose

This purpose of this report is to identify and describe wetlands within three proposed material borrow sites located around the community of Takotna, Alaska (Figure 1). Takotna is located on the Takotna River in the Kuskokwim Mountains of interior Alaska (T34N, R15E, Sections 34, 35, 36, and 37, Kateel River Meridian; approximate latitude 62.9872, longitude -156.0441). The community is approximately 27 kilometers (17 miles) west of McGrath, the regional economic and transportation hub, and 383 kilometers (238 miles) northwest of Anchorage. The Alaska Department of Transportation and Public Facilities (DOT&PF) is proposing to build a new airport and access road near the community. Wetlands are defined by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers (USACOE) as: “those areas that are inundated or saturated by surface or ground water 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 CFR part 328.3(b)).

This document describes locations that are subject to the jurisdiction of the USACOE under authority of Section 404 of the Clean Water Act or under authority of Section 10 of the Rivers and Harbors Act of 1899. The USACOE has authority over certain work in “waters of the U.S.,” including wetlands, and in “navigable” waters. 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 compensate for the impact. The focus of this document is on delineation of wetlands; other waters of the U.S. and navigable waters are discussed in the conclusion.

Initially, six material sites were identified for their potential use as borrow pits for future construction of a new airport and access road. All six sites were investigated during the fall 2004 wetland delineation. Three of the sites are no longer proposed for use and therefore are not described in this memorandum. Proposed material sites 3, 5, and 6 were carried forward for further impact analyses and this Preliminary Jurisdictional Determination (PJD) outlines the conditions observed at those proposed locations.

Material Site 3: Proposed material site 3 is located immediately adjacent to the existing Takotna airstrip north of the community atop a large hill. The proposed borrow area is approximately 6.9 acres in size. It appears the borrow site is periodically used by the community. The southern portion of the proposed material site is excavated and unvegetated. The undisturbed portion of the proposed material site, areas directly north of the airstrip and excavated areas, is comprised of mixed aspen-paper birch forest.

Material Site 5: Proposed material site 5 is located approximately 0.6 mile east of the community, immediately south of an existing trail extending from the community. The proposed borrow area is approximately 2.9 acres in size. Most of the proposed material site is comprised of black spruce woodland except for a low ridge near the site’s northeastern corner which has a mixed community dominated by paper birch and black spruce.

Material Site 6: Proposed material site 6 is located approximately 1.8 miles east of the community of Takotna adjacent to the Takotna River. The proposed borrow site is approximately 43.0 acres in size. The material site is located within a wide bend of the Takotna River. Most of the site is flat and lies slightly higher in elevation than seasonally flooded wetlands along its east side and the river’s floodplain to the west and south. Much of the site is dominated by birch forest, with several areas being comprised of mixed white spruce-paper birch forest. The eastern edge of the proposed site is made up of low shrub and graminoid meadow which appears to be inundated for much of the year. The southwest boundary is bordered by a steep cut bank running parallel to the Takotna River. The southern boundary is lined with a

narrow band of shrub thicket that appears to be within the floodplain of the Takotna River. The northern boundary is generally dominated by a large expanse of black spruce woodland community.

2.0 Methods

In fall 2004, HDR Alaska, Inc. (HDR) was contracted by DOT&PF to complete an on-site wetland field investigation, prepare detailed mapping of wetlands and waterbodies subject to USACOE federal jurisdiction, and produce this technical document which describes areas meeting the USACOE criteria for being designated wetland. The on-site field investigation was completed over a three-day period, occurring on September 6, 7, and 8, 2004. Areas investigated by wetland scientists in the field included the six proposed material sites and potential access routes to those sites. The information presented in this technical memorandum is intended to be used by DOT&PF in planning and permitting the proposed material borrow locations associated with airport improvement projects.

Three steps were used to evaluate and produce an inventory of wetlands and waterbodies in the project area. Those steps include:

2.1 Field Investigation

Two HDR wetland scientists, Jeff Schively and Isaac Watkins, completed a site visit during early September 2004 to collect data at characteristic plant communities occurring at different landform positions. Specific data collected included detailed information on soil conditions, hydrology, and plant community composition. Sites were studied using the U.S. Corps of Engineers 1987 wetland delineation manual's three-parameter method of determining an area's wetland status (USACOE, 1987). Standard Corps of Engineers data sheets were completed at these sites and are included in Appendix A. Each location visited during the field visit was logged into a handheld global positioning system (GPS) unit. Representative photographs and observational data were collected in conjunction with wetland delineation data form plots. Photographs taken at each of the data collection locations are also included in Appendix A.

2.2 Mapping

In the office, scientists stereoscopically analyzed color aerial photography and digitized wetland and waterbody mapping into a Geographic Information System (GIS) database. This digitization process used existing photogrammetric derived topographic mapping and aerial photography collected by Kodiak Mapping, Inc. (taken at a 1"=700' scale, August 2000), and field collected GPS data from the 2004 site investigation. Delineating wetlands from aerial photography included using the following methods:

a. Vegetation clues: On aerial photography, scientists looked for saturation-adapted vegetation communities, open canopy structure, low plant height, and presence of hydrophytic plant species. A common example included dwarf spruce trees, which are indicative of a limitation to growth such as excessively wet soils.

b. Evidence of soil saturation: Visible evidence of wetland hydrology was sought, including surface water and darker areas of photos indicating surface saturation. A site's proximity to streams, open water habitat, and marshes can be indicative of shallow subsurface water.

c. Topography: Evidence of topographic high points and sloped surfaces that would allow soils to drain were used to support classifying those areas as upland. Topographic depressions, toes of slopes, and flat topography served as indicators of potentially poor soil drainage.

2.3 Vegetation and Wetland Classification

Using field-derived data, aerial photographs, topographic mapping, and existing natural resource publications for the area, HDR wetland scientists characterized wetland types based on the U.S. Fish and Wildlife Service Classification of Wetlands and Waterbodies (Cowardin et al., 1979). Vegetation communities encountered in the field were characterized using the Alaska Vegetation Classification System (Vioreck et al., 1992) to a level III category. This information is presented below (section 3.0).

3.0 Preliminary Jurisdictional Determination

3.1 Vegetation

Proposed Material Site #3

An open mixed broadleaf forest is the only plant community type that occurs within the limits of proposed material site #3. Dominant plant species include an overstory of paper birch (*Betula papyrifera* – FACU), quaking aspen (*Populus tremula* – FACU) with an understory dominated by Beauvered spirea (*Spirea beauverdiana* – FAC), northern red-fruit toadflax (*Geocaulon lividum* – FACU), bunchberry (*Cornus canadensis* – FACU), and an unknown willow (*Salix* sp.). The plant community is not hydrophytic. Representative photographs of this community type and a routine wetland determination data form completed at Site #T10 (Figure 2) are included in Appendix A.

Proposed Material Site #5

Three plant community types occur within the limits of proposed material site #5; these include open mixed broadleaf-needleleaf forest, open canopy needleleaf forest, and wet graminoid meadow. Representative photographs and routine wetland determination data forms (sites #T2, T5, T6, and T7; Figure 3) of each of these community types are included in Appendix A. Open mixed broadleaf-needleleaf forest occurs along a low ridge running in a northeasterly direction near the northern portion of the proposed material site. Within this forest type dominant plant species include a canopy of paper birch (FACU) and black spruce (*Picea mariana* – FACW) with a understory dominated by Labrador tea (*Ledum decumbens* – FACW) and woodland horsetail (*Equisetum sylvaticum* – FACU). This plant community type is not hydrophytic.

Open needleleaf forest is the most common plant community type occurring throughout the proposed site, extending also across much of the proposed runway and apron area. Dominant plant species within this forest type include an overstory of black spruce (FACW) with an understory of Labrador tea (FACW), leatherleaf (*Chamaedaphne calyculata* – FACW), and cloudberry (*Rubus chamaemorus* – FACW). This plant community is hydrophytic.

A small portion of a wet graminoid meadow plant community is intersected by the northern boundary of the proposed material site. Within this meadow community, the dominant plant species include black spruce (FACW) saplings, bog rosemary (*Andromeda polifolia* – OBL), round-fruit sedge (*Carex rotundata* – OBL), and tufted bulrush (*Scirpus cespitosus* – OBL). This plant community is hydrophytic.

Proposed Material Site #6

Four general plant community types occur with proposed material site #6. These include open needleleaf forest, open broadleaf forest, tall scrub thicket, and wet graminoid meadow. Representative photographs and routine wetland determination data forms (sites #T19, T20, T22, T24, and T26; Figure 4) of each of these community types are included in Appendix A.

Two types of open needleleaf forest occur within the proposed material site. They include black spruce dominated forest which occurs along the northern boundary of the site and white spruce dominated forest which occurs throughout the central and western portions of the proposed site. Within the black spruce dominated forest type, dominant vegetation includes black spruce (FACW), Labrador tea (FACW), leatherleaf (FACW), and cloudberry (FACW). This plant community is hydrophytic. Within the white spruce dominated forest type, dominant plant species include an overstory of white spruce (*Picea glauca* – FACU) and paper birch (FACU) with an understory dominated by alder (*Alnus crispa* – FAC), prickly rose (*Rosa acicularis* – FACU), woodland horsetail (FACU), and bluejoint grass (*Calamagrostis canadensis* – FAC). This plant community is not hydrophytic.

Open broadleaf forest occurs throughout the southern portions of the proposed material site. Dominant plant species within this forest type include an overstory of paper birch (FACU) with an understory dominated by an assortment of alder (FAC), prickly rose (FACU), high-bush cranberry (*Viburnum edule* – FACU), woodland horsetail (FACU), field horsetail (*Equisetum arvense* – FACU), and bluejoint grass (FAC). This plant community is not hydrophytic.

Tall scrub thicket occurs along the margins of Takotna River and several small ponds on the eastern edge of the proposed material site. Dominant plant species include alder (FAC), felt-leaf willow (*Salix alaxensis* – FAC), prickly rose (FACU), field horsetail (FACU), and bluejoint grass (FAC). This plant community type is hydrophytic.

3.2 Hydrology

Proposed Material Site #3

Site #3 is near the top of a large hill north of the community. No wetland hydrology indicators were observed at the time of the field investigation. Likewise, no defined drainage channels or depressional areas occur within the site which could potentially store surface water. Soils investigated throughout the site were not saturated.

Proposed Material Site #5

Within site #5, all areas of open canopy needleleaf forest and wet graminoid meadow had saturated soils within 6 inches or less of the ground surface, which is indicative of wetland hydrology. Several depressions along the southern and eastern portions of the proposed site had surface water ponding or floating mats of *Sphagnum* mosses. The single area of open mixed broadleaf-needleleaf forest (the low ridge surrounding site T6 along the northern portion of the proposed material site) lacked wetland hydrology indicators.

Proposed Material Site #6

Along the northern and eastern borders of the proposed material site, soils were saturated at or immediately below the ground surface. Surface water was present across the flat areas of the wet graminoid meadow communities along the site's eastern border. In the open broadleaf forest community, oxidized root channels were observed in the soil pits at several sites, and along the eastern and western margins of the plant community were low-lying depressions which may be periodically inundated at wetter times of the year. Several of these low-lying depressions had water-stained leaves within them. No wetland hydrology indicators were observed throughout the large area of open white spruce forest encompassing the central portion of the proposed material site.

3.3 Soils

No detailed local soil surveys have been completed for the project area. Soil characteristics included below are based on the combination of (1) detailed soil profile characteristics collected in conjunction with completing routine wetland determination data forms and (2) less rigorous observations of soil characteristics while quickly probing many locations without completing data forms.

Proposed Material Site #3

Soil pits investigated at material site #3 had a thin (0 to 4 inches deep) organic horizon below the ground surface followed by two B mineral horizons. The upper B horizon was approximately 5 inches in depth. The horizon had a brown color (10YR 4/3) and silty loam texture. The lower B horizon extended below the bottom of the soil pit (greater than 9 inches in depth) sampled at site T10. The lower horizon had a light olive brown color (2.5Y 5/4) and a silty-clay loam texture. No hydric soil characteristics were present at the data form location or at any other location within the proposed material site where soils probe observations were made. A photograph of the soils investigated at site T10 is included in Appendix A.

Proposed Material Site #5

Two different soil types were encountered at sites sampled in and around proposed material site #5. The first type, including soil pits investigated at data form locations T2, T5, and T7, were saturated histosols. Soils at the data form sites and at several other soil probe observation locations encompassed within the open needleleaf forest community and wet graminoid meadows led us to conclude that histosol soils are common throughout and that the soils are hydric. Detailed soil profile characteristics and photographs of the soil pits sampled at data form locations T2, T5, and T7 are included in Appendix A.

The second type of soil encountered at the proposed material site, observed at data form location T6, had a shallow (approximately 2 inches deep) organic horizon at the ground surface followed by two mineral horizons. The upper mineral horizon was approximately 6 inches deep and had a dark yellowish brown (10YR 4/4) color. The lower mineral horizon extended below the investigated soil pit (greater than 8 inches) and had a brown (7.5YR 5/2) color. Both mineral horizons had a silt loam texture. No hydric soil characteristics were observed within this soil type. Detailed soil profile characteristics and a photograph of the soil pit investigated at site T6 are included in Appendix A.

Proposed Material Site #6

Four general soil types were observed throughout proposed material site #6. The spatial distribution of the different soil types generally correlated directly with the different plant community types occurring within the site. Histosols are present within the open black spruce community and wet graminoid meadows occurring along the northern and eastern boundaries of the proposed material site. No mineral horizon was encountered within 18 inches of the surface at areas sampled. These areas were determined to have hydric soil.

Within the open white spruce forest community (data form location T19) in the northwest and central portions of the proposed material site, soil pits had a shallow (4 inches deep) organic horizon immediately below the ground surface followed by a thicker (greater than 16 inches deep) silty loam mineral horizon. The mineral horizon had two dominant matrix colors including a dark grayish brown (10YR 4/2) and dark brown (10YR 3/3) color. No observable hydric soil characteristics were present within this plant community type.

Within the open broadleaf forest communities (including data form locations T20, T22, and T26), the soil profile included a shallow (2 to 4 inches deep) organic horizon below the ground surface followed by either one or two discernable mineral horizons. At the soil pits at data form locations

T20 and T22, a thick continuous B mineral horizon extended from below the organic horizon to below the bottom of the soil pit (greater than 16 inches deep). The thick mineral horizon varied in color from either dark gray (7.5YR 4/1), very dark grayish brown (10YR 3/2), or reddish brown (5YR 4/3). At the soil pit investigated at data form location T26, two near identical mineral horizons were present below the organic horizon. The upper mineral horizon was approximately 6 inches deep with a dark gray (10YR 4/1) color. The lower mineral horizon extended below the bottom of the soil pit (greater than 9 inches deep) and also had a dark gray (10YR 4/1) color. The texture and structure of each horizon supported separating the nearly identical horizons into two separate horizons; the upper horizon had a silty loam texture with sub-angular blocky structure and the lower had a silty clay loam texture and platy structure. Redoximorphic concentrations with colors ranging from dark reddish brown (5YR 3/4), dark brown (7.5YR 3/4), brown (7.5YR 4/4), to dark gray (10YR 4/1) were present throughout the mineral horizons at all of the soil pits investigated. Because of the redoximorphic features present within the mineral horizons, this soil type was determined to be hydric.

The remaining soil type occurred along the banks of the Takotna River that were lined with a tall scrub plant community (site T24). In this area, the soil profile included a shallow (3 inches deep) organic horizon at the ground surface followed by a deep (greater than 16 inches) B mineral horizon. The mineral horizon had a dark brown (7.5YR 3/2) color with many coarse-sized dark-reddish brown (5YR 3/4) redoximorphic concentrations throughout. This soil type was determined to be hydric.

3.4 Conclusion

Wetland locations shown on attached Figures 2, 3 and 4 are based upon the dominance of hydrophytic vegetation, hydrologic indicators, and hydric soil indicators. Developed areas around proposed material site #3 were judged to be upland.

Based on the findings above, it has been determined that areas displayed as wetlands on Figures 2, 3, and 4 meet the USACOE criteria for being classified as wetland. Approximately 34% (18 acres) of the mapped 52.7 acres located at the proposed three material sites were determined to meet the USACOE requirements for being classified as wetlands (Table 1). These areas are subject to jurisdiction under Section 404. The remainder of the mapped project area, approximately 76% (34.7 acres) of the mapped area lack one or more of the required three parameters to support classifying an area as wetland (Table 1). These areas would not be subject to jurisdiction under Section 404.

TABLE 1. WETLAND AND UPLAND SUMMARY

Material Site	Wetland	Upland (non wetland)	Total Size
3	0.0 acres (0%)	6.9 acres (100%)	6.9 acres
5	2.5 acres (87%)	0.4 acres (13%)	2.9 acres
6	15.5 acres (36%)	27.4 acres (64%)	42.9 acres

Several areas described at proposed material sites #5 and #6 overlap with wetland mapping that was originally included in a PJD completed by HDR for the Takotna Airport Project in 2002 (attached as Appendix B). That PJD covered a wide area surrounding several proposed airport relocation sites and was approved by the USACOE in a letter dated June 5, 2002 (Appendix C). The 2002 jurisdictional determination was primarily based on aerial photograph interpretation and supplemented with limited ground truthing. Areas described within this PJD differ slightly from boundaries and wetland type descriptions included in the 2002 PJD mostly because more rigorous site-specific field surveys were completed in conjunction with this investigation. In general, the areas of wetland and non-wetland are similar; however, several smaller, inconspicuous wetland and upland areas were encountered and

sampled in fall 2004 and are included in this PJD. These areas are within the immediate vicinity of proposed material sites 5 and 6.

Within the mapped area surrounding proposed material site #6, the USACOE also has jurisdiction over the waters of the Takotna River below the ordinary high water mark. This area is identified as “R2UBH” on attached Figure 4. This area is subject to Section 404. No other streams, ponds, or lakes occur in the mapped areas of any of the three proposed material sites.

Attachments

Figure 1: Vicinity Map

Figure 2: Proposed Material Site #3

Figure 3: Proposed Material Site #5

Figure 4: Proposed Material Site #6

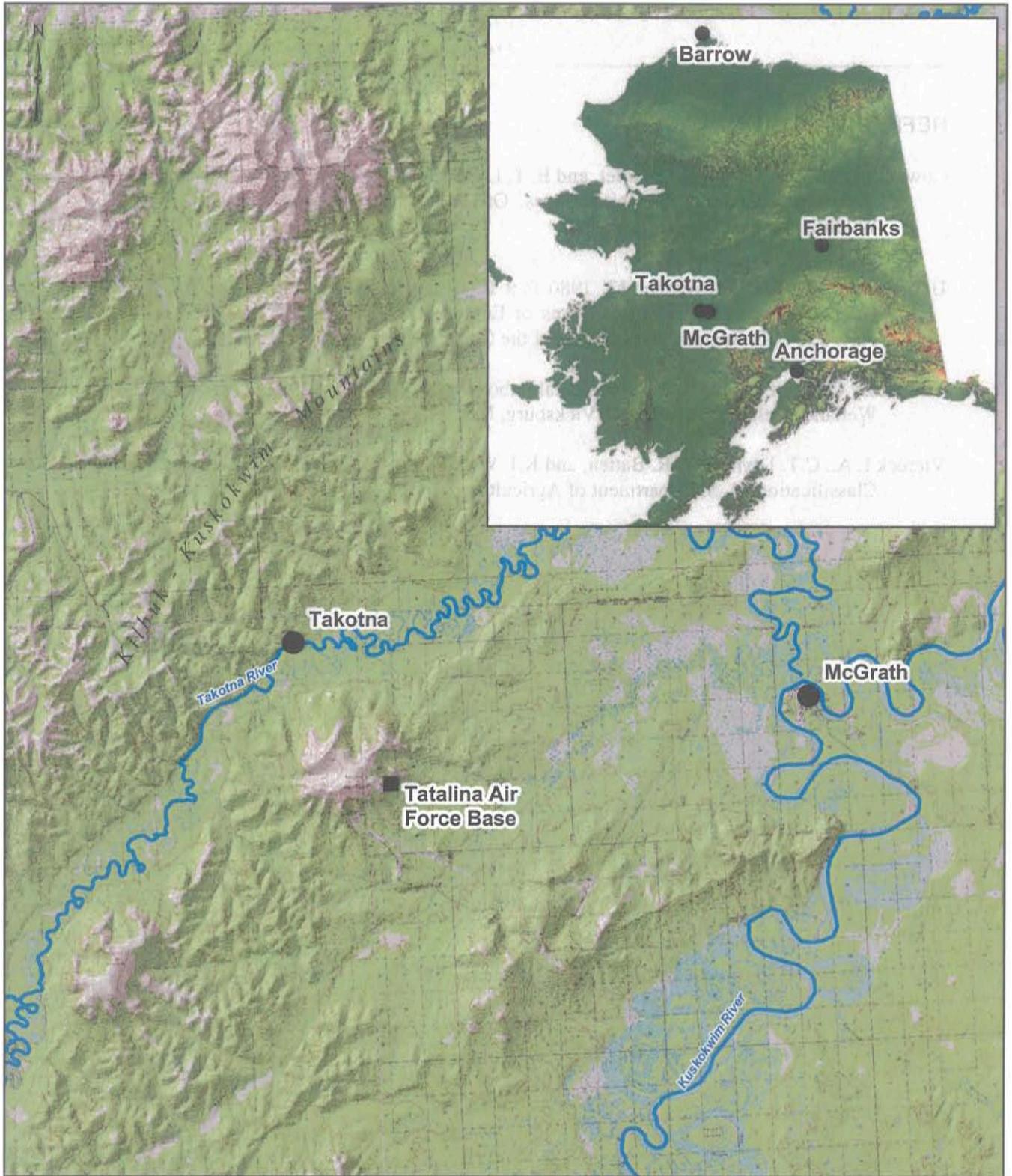
Appendix A: Wetland Determination Data Forms and Site Photography

Appendix B: 2002 Preliminary Jurisdictional Determination

Appendix C: 06-05-2002 Preliminary Jurisdictional Determination Letter of Approval from U.S. Army
Corps of Engineers

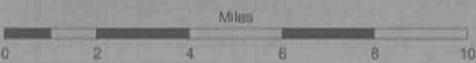
REFERENCES CITED

- Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Office of Biological Services, U.S. Fish and Wildlife Service. Washington, DC.
- U.S. Federal Register. November 13, 1986 Part II. Rules and Regulations, Vol. 51, No. 219. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers; Final Rule.
- U.S. Army Corps of Engineers Environmental Laboratory (USACOE). 1987. *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, MS.
- Viereck L.A., C.T. Dryness, A.R. Batten, and K.J. Wenzlick. 1992. *The Alaska Vegetation Classification*. U. S. Department of Agriculture.



Legend

-  Rivers
-  Towns



Vicinity Map

**Wetlands, Waterbodies,
& Uplands**

**TAKOTNA AIRPORT
MASTER PLAN**

Figure

1

Mapping Classification Code Descriptions¹

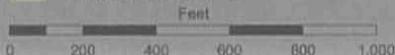
PEM1B	Saturated emergent wetland
PEM1C	Seasonally-flooded emergent wetland
PSS1B	Saturated deciduous scrub-shrub wetland
PSS1C	Seasonally-flooded deciduous scrub-shrub wetland
PSS1/EM1B	Saturated deciduous scrub-shrub/emergent wetland
PSS4B	Saturated evergreen scrub-shrub wetland
PFO1/4B	Saturated deciduous/evergreen mix forest wetland
PFO1B	Saturated deciduous forest wetland
PFO1C	Seasonally-flooded deciduous forest wetland
PFO1/SS4B	Saturated deciduous forest/evergreen scrub-shrub wetland
PFO4/SS4B	Saturated evergreen forest/scrub-shrub wetland
PUBH	Pond
R2UBH	Perennial Stream
U	Upland (non-wetland)

¹Wetland codes and descriptions derived from *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) as modified for National Wetland Inventory Mapping Convention.



Legend

-  Approximate Material Site Boundary/Access Road
-  Data Form Location
-  Wetlands
-  Waterbodies
-  Upland (non-wetland)



Proposed Material Site #3

**Wetlands, Waterbodies,
& Uplands**

**TAKOTNA AIRPORT
MASTER PLAN**

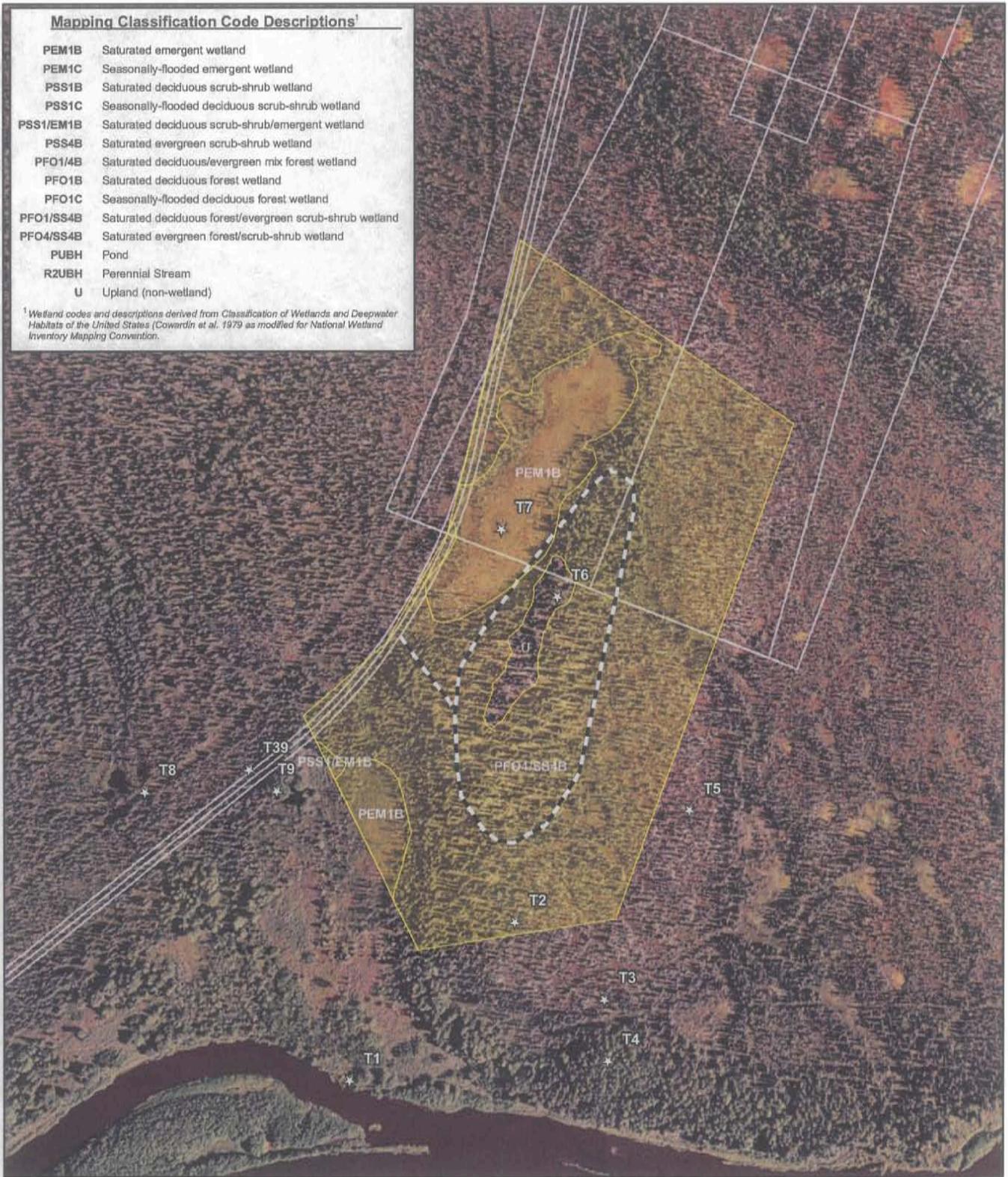
Figure

2

Mapping Classification Code Descriptions¹

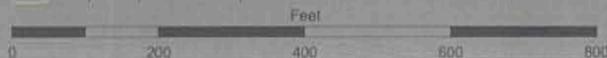
PEM1B	Saturated emergent wetland
PEM1C	Seasonally-flooded emergent wetland
PSS1B	Saturated deciduous scrub-shrub wetland
PSS1C	Seasonally-flooded deciduous scrub-shrub wetland
PSS1/EM1B	Saturated deciduous scrub-shrub/emergent wetland
PSS4B	Saturated evergreen scrub-shrub wetland
PFO1/4B	Saturated deciduous/evergreen mix forest wetland
PFO1B	Saturated deciduous forest wetland
PFO1C	Seasonally-flooded deciduous forest wetland
PFO1/SS4B	Saturated deciduous forest/evergreen scrub-shrub wetland
PFO4/SS4B	Saturated evergreen forest/scrub-shrub wetland
PUBH	Pond
R2UBH	Perennial Stream
U	Upland (non-wetland)

¹Wetland codes and descriptions derived from *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) as modified for National Wetland Inventory Mapping Convention.



Legend

- Approximate Material Site Boundary/Access Road
- Data Form Location
- Wetlands
- Waterbodies
- Upland (non-wetland)



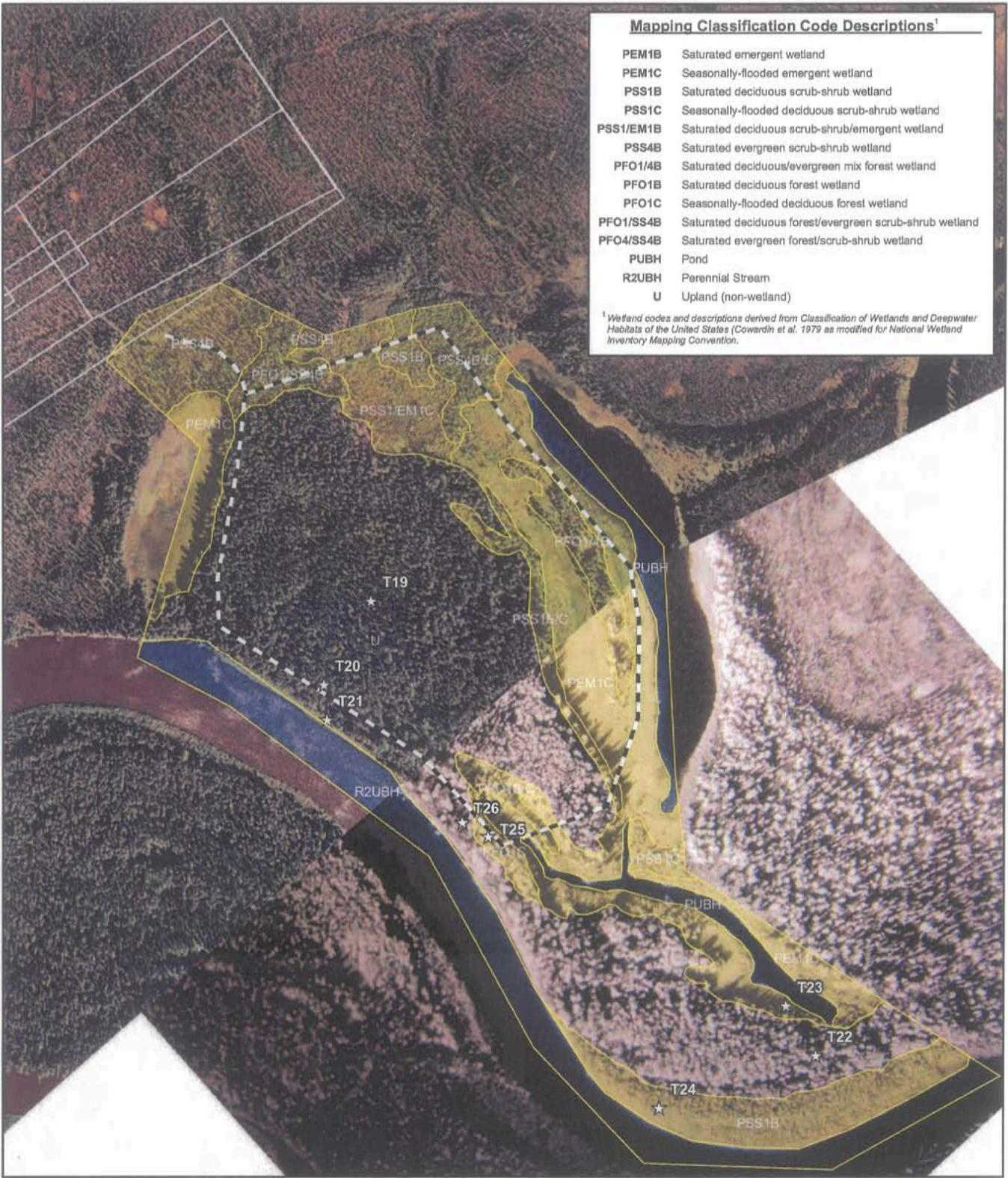
Proposed Material Site #5

**Wetlands, Waterbodies,
& Uplands**

**TAKOTNA AIRPORT
MASTER PLAN**

Figure

3



Mapping Classification Code Descriptions¹

PEM1B	Saturated emergent wetland
PEM1C	Seasonally-flooded emergent wetland
PSS1B	Saturated deciduous scrub-shrub wetland
PSS1C	Seasonally-flooded deciduous scrub-shrub wetland
PSS1/EM1B	Saturated deciduous scrub-shrub/emergent wetland
PSS4B	Saturated evergreen scrub-shrub wetland
PFO1/4B	Saturated deciduous/evergreen mix forest wetland
PFO1B	Saturated deciduous forest wetland
PFO1C	Seasonally-flooded deciduous forest wetland
PFO1/SS4B	Saturated deciduous forest/evergreen scrub-shrub wetland
PFO4/SS4B	Saturated evergreen forest/scrub-shrub wetland
PUBH	Pond
R2UBH	Perennial Stream
U	Upland (non-wetland)

¹ Wetland codes and descriptions derived from Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979 as modified for National Wetland Inventory Mapping Convention).

Legend

- Approximate Material Site Boundary/Access Road
 - Data Form Location
 - Wetlands
 - Waterbodies
 - Upland (non-wetland)
- Feet
0 200 400 600 800

Proposed Material Site #6
Wetlands, Waterbodies,
& Uplands
TAKOTNA AIRPORT
MASTER PLAN

Figure
4

Appendix A

WETLAND DETERMINATION FORMS AND SITE PHOTOGRAPHY

Takotna Airport Master Plan – Proposed Material Sites

Preliminary Jurisdictional Determination

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Takotna</u>	Date: <u>9-6-04</u>
Applicant/Owner: <u>Dot & PF</u>	County: _____
Investigator: <u>JS & JW</u>	State: <u>AK</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open black spruce Forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>TZ</u>

Describe location: Material site #5
VEGETATION Mark site on map.

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
① Pic. mar.	T	20	FACW	9. Cham. caly	S	2	FACW
② Led. dec.	S	40	FACW	10. Bet. nam.	S	T	FAC
③ Rub. cham.	H	15	FACW	11. Oxy. sp.	H	T	OBL
4. Vacc. ulig.	S	5	FAC	12. Bet. pap. (sapling)	T	T	FACW
5. Vacc. vit. id.	S	3	FAC	13. Fruticose lichen		20	NI
④ Car. liv.	H	10	FACW	14. Feather moss	B	4	NI
⑦ Egvi. sly v.	H	7	FACW	15. Sphagnum now	B	60	NI
⑧ Emp. nig.	S	20	FAC	16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 5/6 = 83%

Remarks: _____

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>NA</u> (in.)</p> <p>Depth to Free Water in Pit: <u>NA</u> (in.)</p> <p>Depth to Saturated Soil: <u>6"</u> (in.)</p>	<p>Remarks: _____</p>

SOILS

Map Unit Name (Series and Phase):			Drainage Class: <u>SWPD</u>		
Taxonomy (Subgroup):			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>cm?</i>
<u>20-7"</u>	<u>O_i</u>				
<u>7-0"</u>	<u>O_e</u>				
<u>0-2"</u>	<u>B</u>	<u>7.5YR 3/2</u>			<u>SIL, SABL</u>
Hydric Soil Indicators:					
<u>Y</u> Histosol	<u>N</u> Concretions				
<u>N</u> Histic Epipedon	<u>NA</u> High Organic Content in Surface Layer in Sandy Soils				
<u>N</u> Sulfidic Odor	<u>NA</u> Organic Streaking in Sandy Soils				
<u>✓</u> Aquic Moisture Regime	_____ Listed on Local Hydric Soils List				
<u>N</u> Reducing Conditions	_____ Listed on National Hydric Soils List				
<u>N</u> Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)				
Remarks:					
Major root zone: <u>Upper 14"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this sampling point within a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:			

Township/Range/Section:

Latitude: }
 Longitude: } GPS
 Datum: }
 Elevation: }
 Slope (%): 2%
 Aspect: SSE

Landform:

Topography: (concave/~~convex~~/planar)
 NWI subclass: PSS4B
 HGM type: Flat
 Photos: 2 soil, 1 veg.

Functions:

sediment retention / water quality,
water storage / flood control

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Tukotna</u>	Date: <u>9-6-04</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open black spruce forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>T5</u>

Describe location: Material site 5
VEGETATION Mark site on map.

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
① Pic. mar.	T	30	FACW	9. Larix-lar.	T	T	FACW
② Led. sp.	S	10	FACW	10. Eri. mag.	H	3	OBL
③ Cham. caly.	S	15	FACW	11. Vacc. ulig.	S	3	FAC
④ Rub. cham.	H	15	FACW	12. _____	_____	_____	_____
5. Emp. a.g.	S	4	FAC	13. _____	_____	_____	_____
6. Vacc. vit-id	S	3	FAC	14. Sphagnum moss	B	65	NI
7. Oxy. oxy.	H	2	OBL	15. Fruit-core lichen	-	20	NI
8. Bet. nana	S	T	FAC	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 4/4 100%

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs Other No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands - low wet areas w/ mud/muck
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>14"</u> (in.) Depth to Saturated Soil: <u>0"</u> (in.)	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test Other (Explain in Remarks)

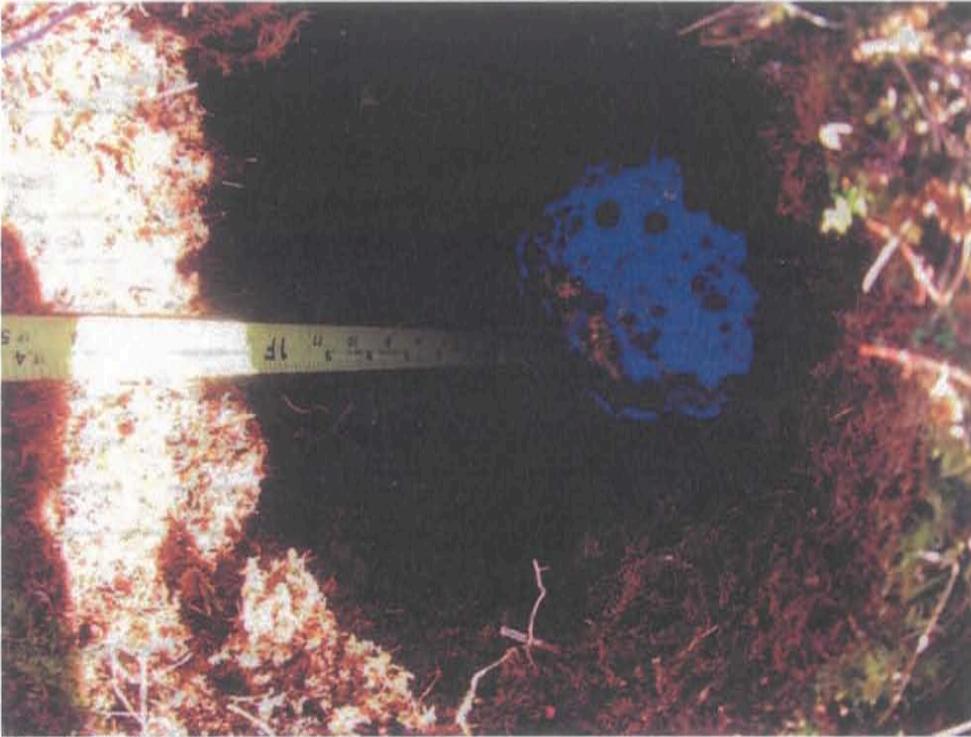
Remarks:



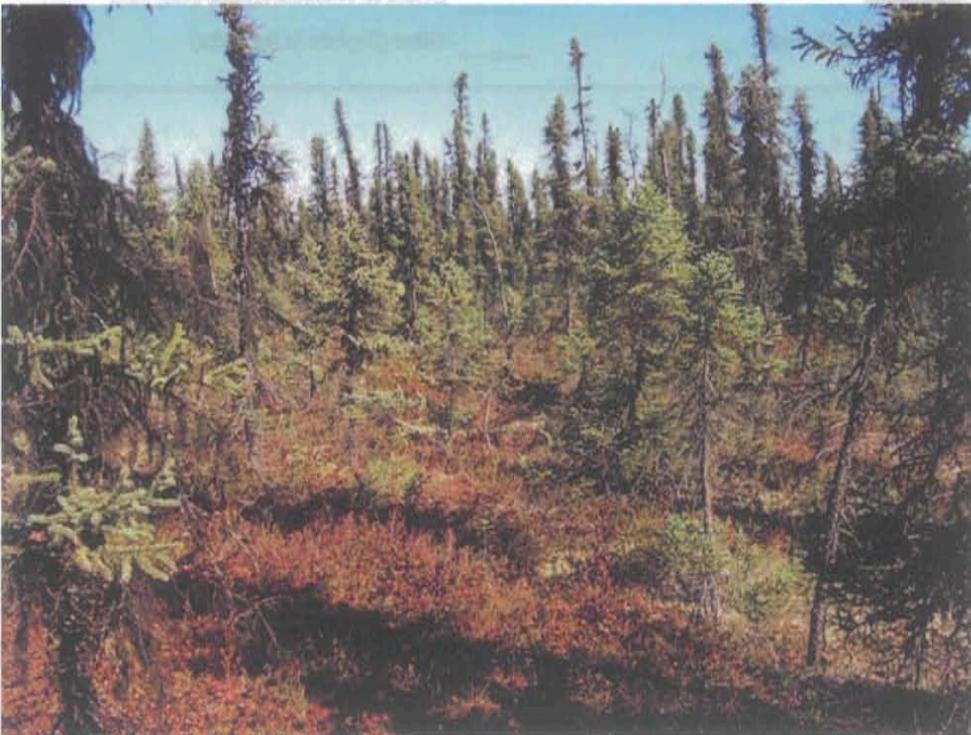
Plot ID T2 (PSS4B) – Soils



Plot ID T2 (PSS4B) – Vegetation



Plot ID T5 (PSS4B) – Soils



Plot ID T5 (PSS4B) – Vegetation

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Takotna</u>	Date: <u>9-6-2004</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & JW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open birch / b. spruce forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>T6</u>

Describe location: Edge of material site #5
VEGETATION mark site on map.

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. <u>Bet. psp.</u>	<u>T</u>	<u>15</u>	<u>FACU</u>	9. <u>Spiraea beun.</u>	<u>S</u>	<u>7</u>	<u>FAC</u>
2. <u>Pic. mar.</u>	<u>T</u>	<u>30</u>	<u>FACW</u>	10. <u>Bet. nana</u>	<u>S</u>	<u>2</u>	<u>FAC</u>
3. <u>led. dec.</u>	<u>S</u>	<u>30</u>	<u>FACW</u>	11. _____	_____	_____	_____
4. <u>Ego. sylv.</u>	<u>H</u>	<u>15</u>	<u>FACU</u>	12. _____	_____	_____	_____
5. <u>Vacc. ulg.</u>	<u>S</u>	<u>7</u>	<u>FAC</u>	13. _____	_____	_____	_____
6. <u>Vacc. v. id.</u>	<u>S</u>	<u>2</u>	<u>FAC</u>	14. <u>Sphagnum moss</u>	<u>B</u>	<u>10</u>	<u>NI</u>
7. <u>Car. liv.</u>	<u>H</u>	<u>1</u>	<u>OBL</u>	15. <u>frutic. moss</u>	<u>B</u>	<u>20</u>	<u>NI</u>
8. <u>Emp. nig.</u>	<u>S</u>	<u>3</u>	<u>FAC</u>	16. <u>fruticose lichen</u>	<u>-</u>	<u>35</u>	<u>NI</u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 24 50%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>Dry ridge line</u>

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>WD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Descriptions:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>only</i>
2-0"	O _i				
0-6"	B ₁	10YR 4/4			SIL, SAPL, 30% <i>etc</i>
6-14"	B ₂	7.5YR 5/2			SIL, SAPL, 40% <i>etc</i>
Hydric Soil Indicators:					
<u>N</u> Histosol		<u>N</u> Concretions			
<u>J</u> Histic Epipedon		<u>NA</u> High Organic Content in Surface Layer in Sandy Soils			
<u>N</u> Sulfidic Odor		<u>NA</u> Organic Streaking in Sandy Soils			
<u>N</u> Aquic Moisture Regime		_____ Listed on Local Hydric Soils List			
<u>N</u> Reducing Conditions		_____ Listed on National Hydric Soils List			
<u>N</u> Gleyed or Low-Chroma Colors		_____ Other (Explain in Remarks)			
Remarks: Major root zone: <u>Upper 7"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is this sampling point within a wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Township/Range/Section:

Latitude: _____
 Longitude: _____
 Datum: _____
 Elevation: _____
 Slope (%): 5% 2% E
 Aspect: SSW

Landform:

Topography: (concave/convex/planar) - small, low ridge
 NWI subclass: J
 HGM type: N/A
 Photos: 2 soil, 1 veg.
 Functions:

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Tukotna</u>	Date: <u>9-6-04</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>J. J. IW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open herbaceous-graminoid meadow</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>TT</u>

Describe location: Edge of meadow site #5
VEGETATION Mark site on map.

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. <u>Poa. mar.</u>	<u>T</u>	<u>7</u>	<u>FACW</u>	9. <u>Lol. dec.</u>	<u>S</u>	<u>T</u>	<u>FACW</u>
2. <u>Larix. lar.</u>	<u>T</u>	<u>T</u>	<u>FACW</u>	10. <u>Scirpus. caes.</u>	<u>H</u>	<u>35</u>	<u>OBL</u>
3. <u>Pet. nam.</u>	<u>S</u>	<u>4</u>	<u>FAC</u>	11. _____	_____	_____	_____
4. <u>And. pol.</u>	<u>H/S</u>	<u>15</u>	<u>OBL</u>	12. _____	_____	_____	_____
5. <u>Diam. caly.</u>	<u>S</u>	<u>T</u>	<u>FACW</u>	13. _____	_____	_____	_____
6. <u>Carex. lasiocarpa</u>	_____	_____	<u>OBL</u>	14. _____	_____	_____	_____
7. <u>Oxy. oxy.</u>	<u>H</u>	<u>1</u>	<u>OBL</u>	15. <u>Sphagnum. mar.</u>	<u>B</u>	<u>70</u>	<u>NI</u>
8. <u>Coc. rot.</u>	<u>H</u>	<u>35</u>	<u>OBL</u>	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 4/4 = 100%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs Other _____ No Recorded Data Available _____	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test Other (Explain in Remarks) _____
Field Observations: Depth of Surface Water: <u>0"</u> (in.) Depth to Free Water in Pit: <u>6"</u> (in.) Depth to Saturated Soil: <u>0"</u> (in.)	Remarks: _____



Plot ID T6 (U) – Soils



Plot ID T6 (U) – Vegetation

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>PD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>cont.</i>
<u>0-19"</u>	<u>O:</u>				
Hydric Soil Indicators:					
<u>Y</u> Histosol	<u>N</u> Concretions				
<u>N</u> Histic Epipedon	<u>NA</u> High Organic Content in Surface Layer in Sandy Soils				
<u>N</u> Sulfidic Odor	<u>NA</u> Organic Streaking in Sandy Soils				
<u>-</u> Aquic Moisture Regime	_____ Listed on Local Hydric Soils List				
<u>N</u> Reducing Conditions	_____ Listed on National Hydric Soils List				
<u>N</u> Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)				
Remarks: <u>upper 9"</u>					
Major root zone: <u>↓</u>					

WETLAND DETERMINATION

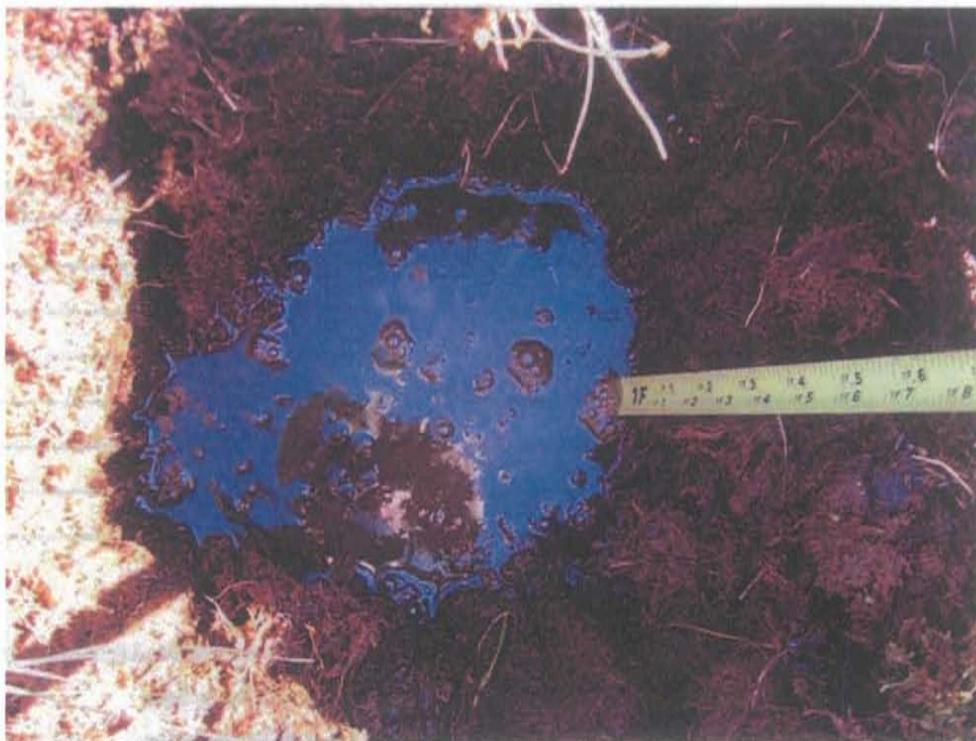
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this sampling point within a wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:		

Township/Range/Section:

Latitude: }
 Longitude: } GPS
 Datum: }
 Elevation: }
 Slope (%): 0%
 Aspect: NA

Landform:

Topography: (concave/convex/plane)
 NWI subclass: PEM1B
 HGM type: Depression
 Photos: 2 soil, 1 veg.
 Functions: water quality, water storage



Plot ID T7 (PEM1B) – Soils



Plot ID T7 (PEM1B) – Vegetation

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Takotna</u>	Date: <u>9/7/14</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS, IW</u>	State: <u>AK</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open Aspen Birch For.</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>T10</u>

Describe location: Material site #3
VEGETATION mark site on map

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. Cor CAN	H	15	FACU	9. EPI AVG	H	1	FACU
2. Bot PAP	T	30	FACU	10. VAC VLT	S	1	FAC
3. Pop Trb	T	20	FACU	11. PIC GLA	T	5	FACU
4. Geo LIV	H	5	FACU	12. Feather MASS	B	5	NI
5. Cal CAN	H	1	FAC	13. SALIX (SPYLMSS)	S	5	FAC
6. Lyc CAN	B	15	NI	14. VAC VEN	S	1	FAC
7. Lyc (cedar)	B	15	NI	15. _____	_____	_____	_____
8. SPI BEA	S	2	FAC	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 2/6 33%

Remarks:

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>N/A</u> (in.)</p> <p>Depth to Free Water in Pit: <u>N/A</u> (in.)</p> <p>Depth to Saturated Soil: <u>N/A</u> (in.)</p>	

Remarks:

SOILS

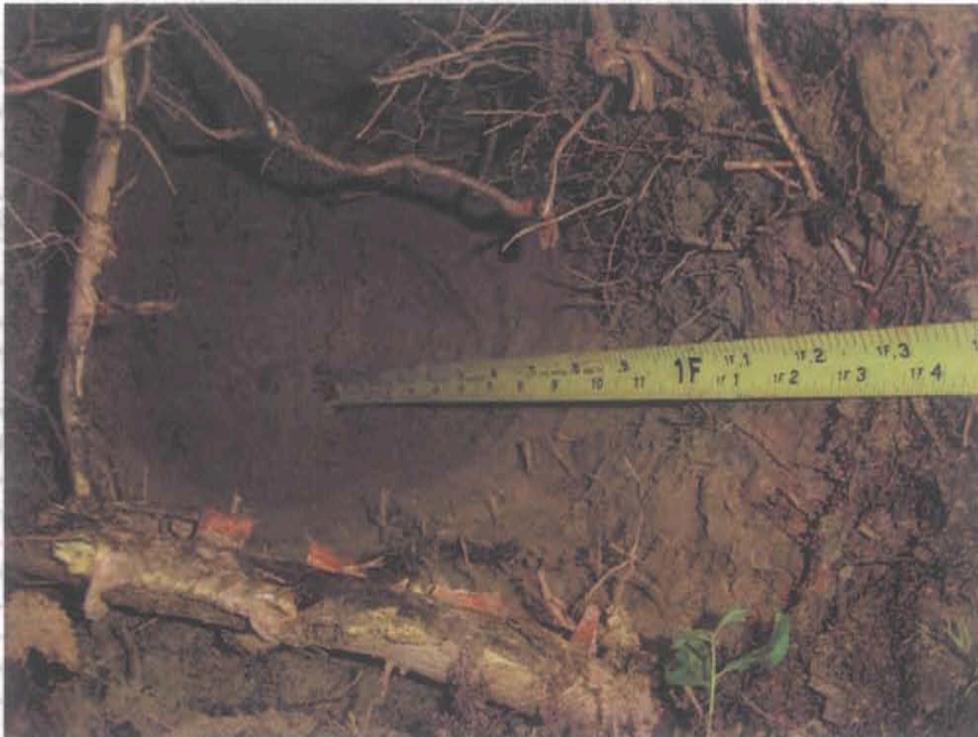
Map Unit Name (Series and Phase): _____			Drainage Class: <u>Well Drained</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>cont.</i>
4-0	<u>OI</u>				
0-5	<u>B1</u>	<u>10YR 4/3</u>			<u>SIL SABL</u>
5-14+	<u>B2</u>	<u>2.5Y 5/4</u>			<u>20% small stone SICL SA</u>
Hydric Soil Indicators:					
<u>N</u> Histosol	<u>N</u> Concretions				
<u>N</u> Histic Epipedon	<u>NA</u> High Organic Content in Surface Layer in Sandy Soils				
<u>N</u> Sulfidic Odor	<u>NA</u> Organic Streaking in Sandy Soils				
<u>N</u> Aquic Moisture Regime	_____ Listed on Local Hydric Soils List				
<u>N</u> Reducing Conditions	_____ Listed on National Hydric Soils List				
<u>N</u> Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)				
Remarks:					
Major root zone: <u>upper 7"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this sampling point within a wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks:		

Township/Range/Section:
 Latitude:
 Longitude: [GPS]
 Datum:
 Elevation:
 Slope (%): 5
 Aspect: SE

Landform:
 Topography: (concave/convex/planar) convex
 NWI subclass: U
 HGM type: NA
 Photos: 2 soil, 1 veg
 Functions:



Plot ID T10 (U) – Soils



Plot ID T10 (U) – Vegetation

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Takotna</u>	Date: <u>9-7-2004</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open spruce forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>T19</u>

Describe location: Material site #6
VEGETATION Mark site on map:

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. <u>Pc. glauca</u>	<u>T</u>	<u>35</u>	<u>FACU</u>	9. <u>Vacc. vit.</u>	<u>S</u>	<u>T</u>	<u>FAC</u>
2. <u>Bet. pap.</u>	<u>T</u>	<u>15</u>	<u>FACU</u>	10. <u>Vib. edv.</u>	<u>S</u>	<u>I</u>	<u>FACU</u>
3. <u>Sp. leuoc.</u>	<u>S</u>	<u>5</u>	<u>FAC</u>	11. <u>Pyr. sec.</u>	<u>H</u>	<u>5</u>	<u>FACU (S)</u>
4. <u>Ros. aci.</u>	<u>S</u>	<u>20</u>	<u>FACU</u>	12. <u>Lyc. com</u>	<u>B</u>	<u>I</u>	<u>NI</u>
5. <u>Cal. can.</u>	<u>H</u>	<u>15</u>	<u>FAC</u>	13. <u>Bos. sp (ground cov)</u>	<u>H</u>	<u>T</u>	
6. <u>Erv. sylv.</u>	<u>H</u>	<u>15</u>	<u>FACU</u>	14. <u>feather moss</u>	<u>B</u>	<u>40</u>	<u>NI</u>
7. <u>Aln. cris.</u>	<u>S</u>	<u>25</u>	<u>FAC</u>	15. <u>Geo. liv.</u>	<u>H</u>	<u>T</u>	<u>FACU</u>
8. <u>Lin. bor.</u>	<u>S</u>	<u>4</u>	<u>FACU</u>	16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 36 33%

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <u>Streams, Lake, or Tide Gauge</u> <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>Soil is damp but not saturated</u>

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: <u>MWD</u>			
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>cont'd</i>
4-0"	O _i				
0-16"	B	10YR 4/2 (60) 10YR 3/3 (40)			SIL/SICL, Platy
Hydric Soil Indicators:					
<u>N</u>	Histosol	<u>N</u>	Concretions		
<u>N</u>	Histic Epipedon	<u>NA</u>	High Organic Content in Surface Layer in Sandy Soils		
<u>N</u>	Sulfidic Odor	<u>NA</u>	Organic Streaking in Sandy Soils		
<u>N</u>	Aquic Moisture Regime		Listed on Local Hydric Soils List		
<u>N</u>	Reducing Conditions		Listed on National Hydric Soils List		
<u>N</u>	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: Major root zone: <u>Upper 6"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this sampling point within a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks:			

Township/Range/Section:

Latitude: }
 Longitude: } 69
 Datum: }
 Elevation: }
 Slope (%): 0%
 Aspect: NA

Landform:

Topography: (concave/concave/planar) planar
 NWI subclass: J
 HGM type: NA
 Photos: 2 soil, 1 veg.
 Functions:



Plot ID T19 (U) – Soils



Plot ID T19 (U) – Vegetation

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>Takotna</u>	Date: <u>9/7/14</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>AK</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open Birch Forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area's potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>720</u>

Describe location:
VEGETATION Mark site on map

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. <u>Bet Pap</u>	<u>T</u>	<u>50</u>	<u>FACU</u>	9. <u>Spi. Bea</u>	<u>S</u>	<u>1</u>	<u>FAC</u>
2. <u>Cal Can</u>	<u>H</u>	<u>30</u>	<u>FAC</u>	10. <u>Galium (SD)</u>	<u>H</u>	<u>1</u>	<u>-</u>
3. <u>Ros Aci</u>	<u>S</u>	<u>15</u>	<u>FACV</u>	11. <u>Aln Cri</u>	<u>T</u>	<u>2</u>	<u>FAC</u>
4. <u>Egv Syl</u>	<u>H</u>	<u>30</u>	<u>FACU</u>	12. _____	_____	_____	_____
5. <u>Egv Arv</u>	<u>H</u>	<u>15</u>	<u>FACU</u>	13. _____	_____	_____	_____
6. <u>Aca Bel</u>	<u>H</u>	<u>7</u>	<u>FAC</u>	14. _____	_____	_____	_____
7. <u>Vib Edu</u>	<u>S</u>	<u>1</u>	<u>FACU</u>	15. _____	_____	_____	_____
8. <u>Pic Gla</u>	<u>T</u>	<u>2</u>	<u>FACU</u>	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 15 20%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs Other _____ <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input checked="" type="checkbox"/> FAC-Neutral Test Other (Explain in Remarks) _____
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	
Remarks: _____	

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>WD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>etc.</i>
<u>3.5-0</u>	<u>O_i</u>	_____	_____	_____	_____
<u>0-16+</u>	<u>B</u>	<u>7.5YR 4/1</u> <u>5YR 4/3</u>	<u>5YR 3/4</u>	<u>COARSE, MANY</u> <u>distinct</u> <u>oxidized root channels</u>	<u>SICL SABL</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Hydric Soil Indicators:					
<u>N</u> Histosol	<u>N</u> Concretions				
<u>N</u> Histic Epipedon	<u>NA</u> High Organic Content in Surface Layer in Sandy Soils				
<u>N</u> Sulfidic Odor	<u>NA</u> Organic Streaking in Sandy Soils				
<u>N</u> Aquic Moisture Regime	_____ Listed on Local Hydric Soils List				
<u>Y</u> Reducing Conditions - <u>oxidized root channels</u>	_____ Listed on National Hydric Soils List				
<u>N</u> Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)				
Remarks: <u>Dry fluffy soil mottled w/color</u>					
Major root zone: <u>upper 7'</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this sampling point within a wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks:		

Township/Range/Section:

Latitude: _____
 Longitude: [GPS]
 Datum: _____
 Elevation: _____
 Slope (%): 0%
 Aspect: NA

Landform:

Topography: (concave/convex/planar)
 NWI subclass: U
 HGM type: N/A
 Photos: 2 soil 1 veg
 Functions: _____



Plot ID T20 (U) – Soils



Plot ID T20 (U) – Vegetation

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>Takotna</u>	Date: <u>9-7-04</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open birch forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>T22</u>

Describe location: End of material site #6
VEGETATION Mark site on map:

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. Bet. pft	T	55	FACU	9. Rub. some/Spec?	S	T	FACU
2. Pic. glauca	T	6	FACU	10. Egu. sylv.	H	20	FACU
3. Ala. eri.	S	20	FAC	11. _____	_____	_____	_____
4. V.b. edule	S	30	FACU	12. _____	_____	_____	_____
5. Ros. aci.	S	7	FACU	13. _____	_____	_____	_____
6. Cal. can.	H	30	FAC	14. _____	_____	_____	_____
7. Egu. arv.	H	30	FACU	15. _____	_____	_____	_____
8. Epi. ang.	H	2	FACU	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) | $2/6 = 33\%$

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs Other _____ No Recorded Data Available _____	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves Local Soil survey Data _____ FAC-Neutral Test _____ Other (Explain in Remarks) _____
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks:

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>WD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Mohr)	Mottle Colors (Munsell Mohr)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>2-0</u>	<u>O_i</u>				
<u>0-16+</u>	<u>B</u>	<u>10YR 3/2</u>	<u>10YR 4/1</u> <u>7.5YR 3/4</u>	<u>Medium, few, faint</u> <u>Medium, many, distinct</u>	<u>SIL SABL</u>
Hydric Soil Indicators:					
<u>N</u>	Histosol	<u>N</u>	Concretions		
<u>N</u>	Histic Epipedon	<u>NA</u>	High Organic Content in Surface Layer in Sandy Soils		
<u>N</u>	Sulfidic Odor	<u>NA</u>	Organic Streaking in Sandy Soils		
<u>N</u>	Aquic Moisture Regime		Listed on Local Hydric Soils List		
<u>Y</u>	Reducing Conditions		Listed on National Hydric Soils List		
<u>Y</u>	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: Major root zone: <u>upper 5"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this sampling point within a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks:			

Township/Range/Section:

Latitude:
 Longitude: } GPS
 Datum:
 Elevation:
 Slope (%): 0%
 Aspect: NR

Landform:

Topography: (concave/convex/platt)
 NWI subclass: U
 HGM type: NA
 Photos: 2 soil / 1 veg
 Functions:



Plot ID T22 (U) – Soils



Plot ID T22 (U) – Vegetation

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Tskotna</u>	Date: <u>9/7/4</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>AK</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Tall shrub thicket</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>T24</u>

Describe location: edge of med. H6 near R.

VEGETATION mark site on map

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. ROS. ACI	S	30	FACU	9. GAL. Iridifolium	H	1	FACW
2. CAL. Can	H	50	FAC	10. Epi. Ana.	H	1	FACU
3. Vib. Edu	S	3	FACU	11. Bet. PMP (saxifrag.)	S	20	FACU
4. Rub. Sde	S	15	FACU	12. Pot. Pal	H	T	OBL
5. Art. Til	H	2	UNK	13. Sal. Bob	BS	10	FAC
6. Mer. Pan	H	1	FACU	14. THA. SPA	H	1	FACU
7. SAL. HLA	S	40	FAC	15. ALN. Cri	S	30	FAC
8. Egv. Arv	H	40	FACU	16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 3/5 60%

Remarks:

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <u> </u> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <u> </u> Other <u> </u> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><u>N</u> Inundated <u>N</u> Saturated in Upper 12 Inches <u>N</u> Water Marks <u>N</u> Drift Lines <u>N</u> Sediment Deposits <u>Y</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><u>Y</u> Oxidized Root Channels in Upper 12 Inches <u>Y</u> Water-Stained Leaves <u> </u> Local Soil survey Data <u> </u> FAC-Neutral Test <u> </u> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>NA</u> (in.)</p> <p>Depth to Free Water in Pit: <u>NA</u> (in.)</p> <p>Depth to Saturated Soil: <u>NA</u> (in.)</p>	

Remarks: Low spots appear to be ponded @ other times of year

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>MWD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>only</i>
<u>3-0</u>	<u>O_i</u>				
<u>0-16"</u>	<u>B</u>	<u>7.5 YR 3/2</u>	<u>5 YR 3/4</u>	<u>coarse, many, distinct</u>	<u>SIL SABL</u>
Hydric Soil Indicators:					
<input checked="" type="checkbox"/> Histosol			<input checked="" type="checkbox"/> Concretions		
<input checked="" type="checkbox"/> Histic Epipedon			<input checked="" type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input checked="" type="checkbox"/> Sulfidic Odor			<input checked="" type="checkbox"/> Organic Streaking in Sandy Soils		
<input checked="" type="checkbox"/> Aquic Moisture Regime			<input type="checkbox"/> Listed on Local Hydric Soils List		
<input checked="" type="checkbox"/> Reducing Conditions			<input type="checkbox"/> Listed on National Hydric Soils List		
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Other (Explain in Remarks)		
Remarks: <u>Embedded organics throughout</u>					
Major root zone: <u>upper 7"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this sampling point within a wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: <u>Marginal wetland, likely a transitional area between upland & wetland.</u>		

Township/Range/Section:

Latitude: _____
 Longitude: [GPS]
 Datum: _____
 Elevation: _____
 Slope (%): 0
 Aspect: NA

Landform:

Topography: (concave/convex/planar)
 NWI subclass: PSS IB
 HGM type: Riverine
 Photos: 2 soil, 1 veg., 1 Hyd.
 Functions: Riparian Buffer



Plot ID T24 (PSS1B) – Soils



Plot ID T24 (PSS1B) – Vegetation

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project Site: <u>Talkeetna</u>	Date: <u>9-6-04</u>
Applicant/Owner: <u>DOT & PF</u>	County: _____
Investigator: <u>JS & IW</u>	State: <u>Alaska</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Open birch forest</u>
Is the site significantly disturbed (a typical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse)	Plot ID: <u>TZ6</u>

Describe location: Narrow band b/w river & wetland @ material site #6

VEGETATION mark site on map

Dominant Plant Species	Stratum	%Cover	Indicator	Dominant Plant Species	Stratum	%Cover	Indicator
1. Bet. pmp.	T	50	FACU	9.			
2. Pic. glau.	T	10	FACU	10.			
3. Ala. cr.	S	35	FAC	11.			
4. Ros. aci.	S	20	FACU	12.			
5. Cal. can.	H	40	FAC	13.			
6. Egu. arv.	H	30	FACU	14.			
7. Vib. edv.	S	12	FACU	15. feather moss	B	4	NI
8. Egu. sylv.	H	1	FACU	16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 2/5 = 40 %

Remarks: _____

HYDROLOGY

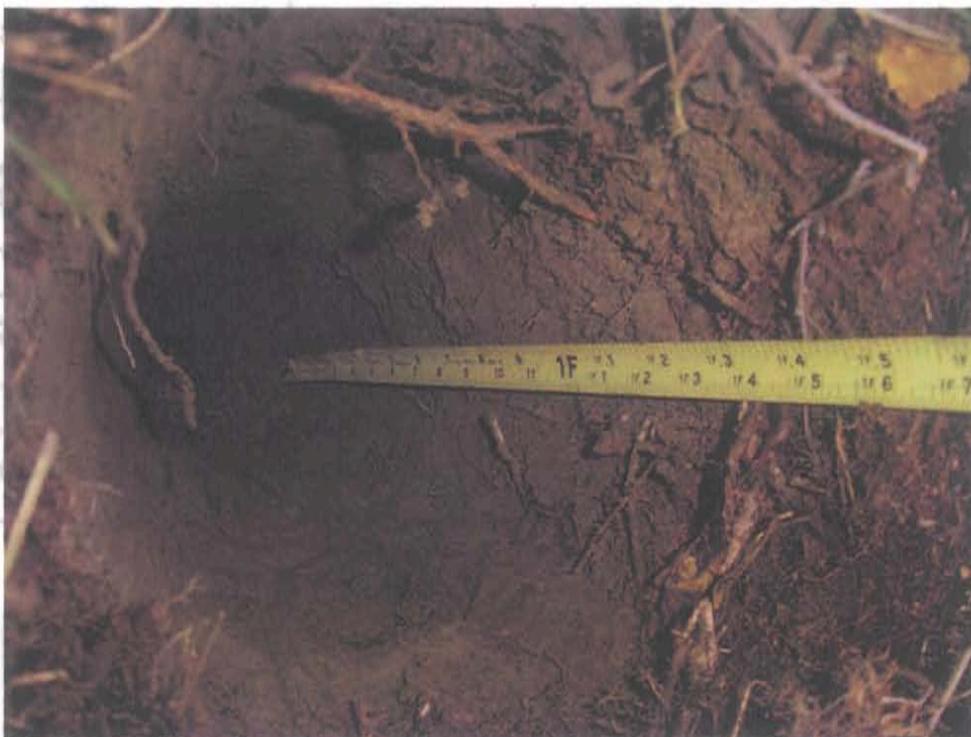
<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <u>Stream, Lake, or Tide Gauge</u> <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>Area appears to have substantial water (surface) during the year... or in the past as evident by exposed tree roots & bases & large hummocks with adjacent low areas. See pictures of site.</u>

SOILS

Map Unit Name (Series and Phase): _____			Drainage Class: <u>MWD</u>		
Taxonomy (Subgroup): _____			Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>conf</i>
4-0	O _i				
0-6	B ₁	10YR 4/1	7.5YR 4/4	fey, fine, faint	SIL SABL
6-15+	B ₂	10YR 4/1	7.5YR 3/4	coarse, many, distinct	SIL PLTY Along root channels
Hydric Soil Indicators:					
<u>N</u> Histosol	<u>N</u> Histic Epipedon	<u>N</u> Sulfidic Odor	<u>N</u> Aquic Moisture Regime	<u>N</u> Reducing Conditions	<u>N</u> Gleyed or Low-Chroma Colors
<u>N</u> Concretions	<u>NA</u> High Organic Content in Surface Layer in Sandy Soils	<u>NA</u> Organic Streaking in Sandy Soils	<u> </u> Listed on Local Hydric Soils List	<u> </u> Listed on National Hydric Soils List	<u> </u> Other (Explain in Remarks)
Remarks:					
Major root zone: <u>upper 6"</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is this sampling point within a wetland?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks: Due to observable surface wetland hydr. we dug our soil pit into a <u>bar</u> area that would be either wet or marginal wet. to fully determine if hydrology present indicated wetland condition.	
Township/Range/Section:	Landform:
Latitude:	Topography: <u>(concave)</u> /convex/plansar
Longitude: <u>-6P5</u>	NWI subclass: <u>U</u>
Datum:	HGM type: <u>NA</u>
Elevation:	Photos: <u>2 soil, 1 veg, 2 hydrology</u>
Slope (%): <u>2 to</u>	Functions:
Aspect: <u>N</u>	



Plot ID T26 (U) – Soils



Plot ID T26 (U) – Vegetation

Key to Plant Name Abbreviations Used on Wetland Data Forms

Data From Abbreviation	Scientific Name	Common Name	Regional Indicator Status	Stratum
Aco. del.	<i>Aconitum delphinifolium</i>	Monkshood	FAC	Herbaceous
Aln. cri.	<i>Alnus crispa</i>	Green alder	FAC	Shrub
Bog rosemary	<i>Andromeda polifolia</i>	Bog rosemary	OBL	Shrub
Arc. alp.	<i>Arctostaphylos alpina</i>	Alpine manzanita	FAC	Herbaceous
Art. til.	<i>Artemisia tilesii</i>	Mugwort	NI	Herbaceous
Bet. glan.	<i>Betula glandulosa</i>	Dwarf birch	FAC	Shrub
Bet. nana.	<i>Betula nana</i>	Swamp birch	FAC	Shrub
Bet. pap.	<i>Betula papyrifera</i>	Paper birch	FACU	Tree
Cal. can.	<i>Calamagrostis canadensis</i>	Bluejoint reedgrass	FAC	Herbaceous
Car. can.	<i>Carex canescens</i>	Hoary sedge	OBL	Herbaceous
Car. sp.	<i>Carex sp.</i>	Unidentifiable sedge	N/A	Herbaceous
Cham. caly.	<i>Chamaedaphne calyculata</i>	Leatherleaf	FACW	Shrub
Cor. can.	<i>Cornus canadensis</i>	Bunchberry	FACU	Herbaceous
Dry. dil.	<i>Dryopteris dilatata</i>	Woodfern	FACU	Herbaceous
Emp. nig.	<i>Empetrum nigrum</i>	Crowberry	FAC	Shrub
Epi. ang.	<i>Epilobium angustifolium</i>	Tall fireweed	FACU	Herbaceous
Equ. arv.	<i>Equisetum arvense</i>	Field horsetail	FACU	Herbaceous
Equ. fluv.	<i>Equisetum fluviatile</i>	Water horsetail	OBL	Herbaceous
Equ. scirp.	<i>Equisetum scirpoides</i>	Dwarf scouring-rush	FACU	Herbaceous
Equ. sylv.	<i>Equisetum sylvaticum</i>	Woodland horsetail	FACU	Herbaceous
Eri. ang.	<i>Eriophorum angustifolium</i>	Narrow-leaf cotton grass	OBL	Herbaceous
Gal. tri.	<i>Galium triflorum</i>	Fragrant bedstraw	FACU	Herbaceous
Geo. liv.	<i>Geocaulon lividum</i>	Northern toadflax	FACU	Herbaceous
Gym. dry.	<i>Gymnocarpium dryopteris</i>	Oak fern	FACU	Herbaceous
Larix. lar.	<i>Larix laricina</i>	American larch	FACW	Tree
Led. dec.	<i>Ledum decumbens</i>	Narrow-leaf Labrador tea	FACW	Shrub
Led. gro.	<i>Ledum groenlandicum</i>	Greenland Labrador tea	FACW	Shrub
Lin. bor.	<i>Linnaea borealis</i>	Twinflower	NI	Shrub
Lyc. comm.	<i>Lycopodium annotinum</i>	Stiff clubmoss	FAC	N/A
Lycopodium (cedar)	<i>Lycopodium complanatum</i>	Groundcedar	NI	N/A
Mer. pan.	<i>Mertensia paniculata</i>	Tall bluebells	FACU	Herbaceous
grass sp.	N/A	Unidentifiable grass	N/A	Herbaceous
Ped. fri.	<i>Petasites frigidus</i>	Arctic coltsfoot	FACW	Herbaceous
Pic. gla.	<i>Picea glauca</i>	White spruce	FACU	Tree
Pic. mar.	<i>Picea mariana</i>	Black spruce	FACW	Tree
Pol. acu.	<i>Polemonium acutiflorum</i>	Tall Jacob's ladder	FAC	Herbaceous
Pop. bals.	<i>Populus balsamifera</i>	Black cottonwood	FACU	Tree
Pop. trem.	<i>Populus tremula</i>	Quaking aspen	FACU	Tree
Pot. frut.	<i>Potentilla fruticosa</i>	Shrubby cinquefoil	FAC	Shrub
Pot. pal.	<i>Potentilla palustris</i>	Marsh cinquefoil	OBL	Herbaceous
Pyr. asa.	<i>Pyrola asarifolia</i>	Pink wintergreen	FAC	Herbaceous
Pyr. sec.	<i>Pyrola secunda</i>	One-sided wintergreen	FAC	Herbaceous
Rib. huds.	<i>Ribes hudsonianum</i>	Hudson Bay current	FAC	Shrub
Ros. aci.	<i>Rosa acicularis</i>	Prickly rose	FACU	Shrub
Rub. cha.	<i>Rubus chamaemorus</i>	Cloudberry	FACW	Herbaceous
Dock (american)	<i>Rumex fenestratus</i>	Western dock	OBL	Herbaceous
Sal. alax.	<i>Salix alaxensis</i>	Felt-leaf willow	FAC	Shrub
Sal. barc.	<i>Salix barclayi</i>	Barclay willow	FAC	Shrub
Sal. las.	<i>Salix lasiandra</i>	Pacific willow	FACW	Shrub
Sor. sitch.	<i>Sorbus sitchensis</i>	Mountain ash	NI	Shrub
Spirea. beauv.	<i>Spirea beauverdiana</i>	Beauvered spirea	FAC	Shrub
Tar. off.	<i>Taraxacum officinale</i>	Dandelion	FACU	Herbaceous
Oxy. oxy.	<i>Vaccinium oxycoccos</i>	Bog cranberry	OBL	Shrub
Vacc. ulig.	<i>Vaccinium uliginosum</i>	Bog blueberry	FAC	Shrub
Vac. vid.	<i>Vaccinium vitis-idaea</i>	Low-bush cranberry	FAC	Shrub
Vib. edu.	<i>Viburnum edule</i>	High-bush cranberry	FACU	Shrub

Appendix B

2002 PRELIMINARY JURISDICTIONAL DETERMINATION

*Takotna Airport Master Plan – Proposed Material Sites
Preliminary Jurisdictional Determination*

Appendix C

06-05-2002 PRELIMINARY JURISDICTIONAL DETERMINATION LETTER OF APPROVAL FROM U.S. ARMY CORPS OF ENGINEERS

*Takotna Airport Master Plan – Proposed Material Sites
Preliminary Jurisdictional Determination*

Takotna Airport Project

Wetlands Determination Report

by
HDR Alaska, Inc.

Introduction

Takotna is located on the Takotna River in the Kuskokwim Mountains of interior Alaska. The community is approximately 27 kilometers (17 miles) west of McGrath, the regional economic and transportation hub, and 383 kilometers (238 miles) northwest of Anchorage. The Alaska Department of Transportation and Public Facilities (ADOT&PF) is proposing to build a new airport and access road near the community. HDR visited the project area in September 2000 and performed limited ground truthing of wetland types identified from aerial photography. The following is an initial wetland determination of the proposed airport and access road and the surrounding area.

Wetland Types

The U.S. Fish and Wildlife Service has not done a National Wetlands Inventory map for Takotna. A wetland determination of the project area was performed by HDR Alaska in accordance with U.S. Army Corps of Engineers standards. The determination was based on identification of wetland vegetation, hydric soils, and wetland hydrology using stereo aerial photography and limited ground truthing.

Varied habitat, including upland areas and palustrine wetlands occur within the proposed airport and road alignments. The upland areas are mostly dominated with dense Sitka spruce forests. The palustrine wetlands, as indicated on the National Wetland Inventory map, include forested, scrub-shrub, shrub-sedge, emergent vegetation, and open water ponds. The saturated forested wetland (PFO on Figure 3) is probably composed of needle-leaved evergreen, such as stunted black spruce. The saturated and seasonally flooded scrub-shrub wetland (PSS on Figure 3) is probably composed of needle-leaved evergreen, and broad-leaved deciduous, such as dwarf birch, alder and willow. Ericaceous shrubs, such as Labrador tea, sweet gale, cranberry, crowberry, and blueberry may also be found in this wetland type. The saturated and seasonally flooded shrub-sedge wetland (PSS/EM on Figure 3) would most likely be composed of the same species listed for the scrub-shrub wetland, with the addition of emergent vegetation, such as sedges and forbs. The semi-permanently flooded emergent vegetation wetlands (PEM on Figure 3) are most likely comprised of sedges and forbs. The permanently flooded pond wetlands (PUB on Figure 3) are comprised of open water habitats with unconsolidated bottoms, most likely with aquatic vegetation bordered by emergent vegetation, such as sedges and forbs, on the shorelines.

The Balika Basin and a large lake are located to the east of the proposed airport. Several tributaries apparently located near and connected to the large lake run through some of the palustrine wetlands.

Wetland Functions

Wetland areas perform functions that are significant to the environment. All the wetland types in the project vicinity function in nutrient cycling that supports the food web of the area. Organic nutrients from plant and animal sources are transported through the wetlands or used on site. All the wetlands in the project area provide plant and wildlife habitat. Wetlands also filter sediments and contaminants from runoff.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 898
ANCHORAGE, ALASKA 99506-0898

JUNE 5 2002

Regulatory Branch
North Section
9-2002-0491

RECEIVED
DOT & P/F PLANNING

JUN 06 2002

ANCHORAGE, ALASKA

Mr. Mark Mayo
Chief, Planning
Alaska Department of Transportation
and Public Facilities
P.O. Box 196900
Anchorage, AK 99519-1969

Dear Mr. Mayo:

This letter is in response to your April 26, 2002, request for a Department of the Army (DA) jurisdictional determination for the proposed airport relocation project at Takotna, Alaska. The project would be constructed within sections 35 and 36, T. 34 N., R. 36 W., Seward Meridian, in Takotna, Alaska. The Alaska Department of Transportation and Public Facilities (ADOT/PF) proposes to relocate the airport runway 0.8 mile to the east and to add additional airport improvements.

Based on our review of the information you furnished to our office, we have determined that your proposed project would involve the placement of fill material into waters of the U.S. under our regulatory jurisdiction (see enclosure titled, "BASIS FOR JURISDICTIONAL DETERMINATION"). Therefore, issuance of an individual DA permit is required prior to conducting your proposed work.

Your proposed project was reviewed pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for certain structures or work in or affecting navigable waters of the U.S., prior to conducting the work (33 U.S.C. 403). Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work (33 U.S.C. 1344).

For regulatory purposes, the Corps of Engineers defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Navigable waters of the U.S. are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified as navigable by the Alaska District.

Please be advised that land clearing operations involving vegetation removal with mechanized equipment such as front-end loaders, backhoes, or bulldozers with shear blades, rakes, or discs in wetlands; or windrowing of vegetation, land leveling or other soil disturbances are considered placement of fill material under our jurisdiction.

This approved jurisdictional determination is valid for a period of five (5) years from the date of this letter, unless new information supporting a revision is provided to this office before the expiration date. Also, enclosed is a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this Department of the Army Approved Jurisdictional Determination.

Regarding your request for information on base floodplains, regulatory floodways, and/or flood hazard areas, the Corps' Hydrology and Hydraulics Branch was contacted. Although no site specific information is available, the proposed airport relocation site is not likely to be in danger of flooding.

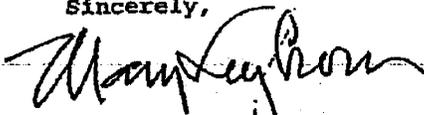
Enclosed is a copy of our Regulatory Program Applicant Information Pamphlet, including a permit application. This pamphlet is designed to assist you in applying for a DA permit and provides general information and guidance on how to complete the permit application. An Individual DA permit will be required for the proposed airport relocation project. The Environmental Assessment prepared for this project must include information regarding the availability of alternatives which do not involve placing fill material into waters of the U.S. Please enclose, with your permit application package, a copy of the Environmental Assessment which you are preparing for this project. For informational purposes, a copy of this letter is being sent to the agencies and individuals on the enclosed list.

Nothing in this letter shall be construed as excusing you from compliance with other Federal, State, or local statutes, ordinances, or regulations that may affect any proposed work.

Please take a moment to complete and return the enclosed questionnaire. Our interest is to see how we can continue to improve our service to you, our customer, and how best to achieve these improvements. Upon your request, you may also provide additional comments by telephone or a meeting. We appreciate your efforts and interest in evaluating the regulatory program.

We appreciate your cooperation with the Corps of Engineers' Regulatory Program. Please refer to file number 9-2002-0491 in future correspondence or if you have any questions concerning this determination. You may contact me at the letterhead address, ATTN: CEPOA-CO-R-N, at 753-2716, or by FAX at 753-5567. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,



Mary F. Leykova
Regulatory Specialist

Enclosures

Copies Furnished:

Mr. Tim Rumpfelt
Alaska Department of Environmental
Conservation
555 Cordova Street
Anchorage, Alaska 99501-2617

Project Coordinator
Office of Management and Budget
Division of Governmental Coordination
550 West 7th Avenue, Suite 1660
Anchorage, Alaska 99501-3568

Ms. Ann Rappoport
Field Supervisor
U.S. Fish and Wildlife Service
Ecological Service Anchorage
605 West 4th Avenue, Room 62
Anchorage, Alaska 99501-2249

Supervisor
Western Alaska Ecological
National Marine Fisheries Service
222 West Seventh Avenue, # 43
Anchorage, Alaska 99513-7577

Ms. Judith Bittner
Department of Natural Resources
State Historic Preservation Office
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

Mr. Richard B. Thompson
State of Alaska
Department of Natural Resources
Division of Land
550 W. 7th Avenue, Suite 900C
Anchorage, Alaska 99501-3577

Mr. Gary Prokosch
State of Alaska
Department of Natural Resources
Division of Water
550 W. 7th Avenue, Suite 900A
Anchorage, Alaska 99501-3577

Mr. Lance Trasky
Regional Supervisor
Habitat Division Region II
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, Alaska 99518-1599

Alaska Operations Office
Environmental Protection Agency
222 West Seventh Avenue, # 19
Anchorage, Alaska 99513-7588

**Takotna Airport Relocation and Access Road
BASIS FOR JURISDICTIONAL DETERMINATION**

Applicant: Alaska Department of Transportation & Public Facilities File #: 2002-0491

The U.S. Army Corps of Engineers, Alaska District, Regulatory Branch has evaluated your project site to determine the presence or absence waters of the United States, including wetlands, which are subject to regulatory jurisdiction under Section 404 of the Clean Water Act and/or Section 9 and/or Section 10 of the Rivers and Harbors Act of 1899.

1. DETERMINATION:

A. This site has jurisdictional Waters of the United States, which are defined in 33 CFR 328.3. Your site has:

(1) A waterway which is currently used, or was used in the past, or may be susceptible to use in interstate or foreign commerce, including all water which is subject to the ebb and flow of the tide (navigable water);

(2) An interstate water, including interstate wetlands;

(3) A water such as an intrastate lake, river, stream (including intermittent streams), mudflat, sandflat, wetland, slough, prairie pothole, wet meadow, playa lake, or a natural pond, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

- (a) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
- (b) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- (c) Which are used or could be used for industrial purpose by industries in interstate commerce;
- (d) Other;

(4) An impoundment of water otherwise defined as a water of the United States under the definition;

(5) A tributary to a water identified in paragraphs (A)(1) through (4) above;
(1) , (2) , (3) , and (4) . <check the number as appropriate>

(6) A territorial sea;

(7) A wetland adjacent¹ to waters (other than waters that are themselves wetlands) identified in paragraphs (A) (1) through (6) above: (1) , (2) , (3) , (4) , (5) , (6) ; <check the number as appropriate>

B. Limits of jurisdiction: Section 10: non-tidal water Limits: mean high water
 Limits of jurisdiction: Section 404: non-tidal water Limits: to limit of the wetland

2. SOME INDICATORS SUPPORTING THE DETERMINATION: indicated as wetland on National Wetland Inventory map; aerial photography interpretation; wetland hydrology; soils listed as hydric on soils map; hydric soils as determined by field inspection; hydrophytic plant community; adjacency to navigable or interstate waters; linkage to interstate or foreign commerce; other.

3. Rationale: The proposed airport relocation site has been characterized as wetlands on NWI map IIditarod D-1 (palustrine, scrub, shrub with some black spruce; seasonally flooded to saturated soils). In addition, the proposed airport and access road cross two tributaries to the Takotna River. The applicant's contractor, HDR Alaska, has been on site and has confirmed that the area contains wetlands. Hydric soils present include: Histic Pergelic Cryaquepts.


Mary F. Leyton
Regulatory Specialist
North Section

May 23, 2002
Date

¹ Adjacency is defined in 33 CFR 328.3 (c) as "bordering, contiguous, or neighboring," with the further clarification that "[w]etlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands'."

Applicant: Alaska Department of Transportation & Public Facilities		File Number: 9-2002-0491	Date: 06/04/02
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

If you have questions regarding this decision and/or the appeal process you may contact:

NAME, RS/PM
Alaska District Corps of Engineers
CEPOA-CO-R-S
PO BOX 6898
Elmendorf AFB, AK 99506-6898
(907) 753-2712
(800) 478-2712 (toll free in AK)

If you only have questions regarding the appeal process you may also contact:

Commander
ATTN: ET-C/Michael Lee
USAED, Pacific Ocean
Building 230
Fort Shafter, HI 96858-5440

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date: _____

Telephone number: _____

Mail to:

Commander
ATTN: ET-C/Michael Lee
USAED, Pacific Ocean
Building 230
Fort Shafter, HI 96858-5440