

Desktop Wetland Delineation

Ambler Mining District Industrial Access Project



Prepared for:

Alaska Industrial Development and Export Authority

By:

DOWL

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1.0 Introduction

The Alaska Industrial Development and Export Authority (AIDEA) is requesting a Preliminary Jurisdictional Determination for the eastern portion of the Ambler Mining District Industrial Access Project (AMDIAP) corridor (Figure 1). This report documents the results of a desktop delineation performed on the eastern 50 miles of the project from 67.08° Latitude/-150.35° Longitude to 67.02° Latitude/-152.04° Longitude (from the Dalton Highway proceeding west for 50 miles). The remainder of the corridor (from 67.02° Latitude/-152.04° Longitude to 67.16° Latitude/-157.05° Longitude) is covered in the AMDIAP Preliminary Wetland Delineation (PWD) report submitted to the USACE in May 2014.

This desktop wetland delineation did not involve fieldwork. The desktop delineation was conducted using Part IV Method D.1. of the 1987 Manual by DOWL staff, Lucas Gasek, PWS and Adam Morrill (Exhibit 1). No deviations from the manual occurred.

A verification and certification statement can be found on the last page of this report.

2.0 Methods and Supporting Materials used for Delineating Wetlands

The desktop wetland delineation study area was a 1,000-foot-wide corridor centered on the proposed road alignment. The corridor begins at the Dalton Highway near Milepost 161 and continues west to about 6 miles west of the John River.

The wetland information for the eastern portion of the corridor was based on a desktop wetland delineation using the available data listed below in accordance with Part IV Method B of the 1987 Manual for preliminary data gathering and synthesis:

- Contour: 5-meter intervals (Statewide Digital Elevation Model);
- Aerial Photography: High-resolution color aerial photographs of the study area, 1.5-foot pixels and Aerometric, 2012 near the start of the corridor along the Dalton Highway;
- NWI AK_Wetlands: Data set that represents the approximate location and type of wetlands and deep water habitats in the United States (Dalton Highway Corridor);
- NRCS STATSGO database: Broad based inventory of soils and non-soil areas;
- DNR Hydrography: 1:63,360 digitized from USGS quadrangles; and
- National List of Plant Species That Occur in Wetlands: Alaska.

Wetland and upland polygons for the eastern portion of the corridor were mapped at a 1:2,000 scale with one-tenth of an acre polygon as a minimum size. The high-resolution aerial imagery and 5-meter contours allowed for the identification of wetland and upland polygons, but not for classification of the wetlands by Cowardin Classification.

3.0 Wetland Delineation Results (Important Findings)

The study area consists of 3,752 acres of wetlands, 58 acres of open water, and 2,717 acres of uplands (see Figure Sets A and B).

Kind/Locations of Wetlands

This report documents a desktop delineation used only to determine wetland and upland polygons, not to determine wetland classifications. However, based on our familiarity with this area, we anticipate that forested wetlands cover most of the study area. In many areas, fires have regressed plant succession. Fire areas have resorted back to emergent and scrub-shrub species and in some areas may have resulted in loss of much of the organics. Scrub-shrub and emergent wetland usually occur within a short distance of a watercourse in these areas.

Rationale for Wetland Boundaries

Mapping of upland and wetland polygons were based on aerial imagery signature, hydrology, and landscape position. The wetland delineators, Lucas Gasek, PWS, and Adam Morrill, are familiar with the ecosystems in the study area, having recently conducted field delineations in the vicinity of this study area.

Current and/or Historic Land Use

The study area is primarily undeveloped outside of the Dalton Highway corridor. The area serves primarily as wildlife habitat and is used for subsistence and recreation.

Topography and/or Geomorphology

The topography of the area is rolling hills.

Potential Pollutants or Environmental Hazards

There are no known pollutants or environmental hazards in the project area.

Species Habitat

Forested wetland in this area provides habitat for many species of animals including moose, caribou, furbearers, black and brown bears, fish, songbirds and raptors. Forests, scrub-shrub, and emergent habitat types provide food and shelter for these species.

4.0 Summary and Conclusion

The study area consists of 3,752 acres of wetlands, 58 acres of open water, and 2,717 acres of uplands (see Exhibit 2, Figure Set A).

DOWL mapped wetland and upland polygons based on vegetation, hydrology, and landscape position. This desktop wetland delineation mapped Waters of the U.S., including streams, wetlands, and open waters (ponds).

A large portion of the eastern portion of the AMDIAP corridor has been burned. During 2014 fieldwork in the vicinity of the study area, DOWL observed many fire-affected areas had a Bluejoint and fireweed understory with thin (less than 4 inches) organic soil layers. These areas were likely black spruce forests with thick organic layers (greater than 8 inches) pre-fire. DOWL also observed upland habitats were less impacted by fire. It is assumed the wetland areas contain more fuel sources than upland areas, such as peat and other organic materials. These conditions allow fires to burn hotter and persist longer in wetlands rather than uplands.

In completing the mapping for this delineation, DOWL observed many of the aerial-mapped polygons lacked vegetation signatures of forest or scrub-shrub and were likely in the early stages of post-fire revegetation. These areas were mapped based on unburnt vegetation, hydrology indicators, and landscape position.

Fewer streams were mapped in the eastern portion of the corridor as compared to the first 50 miles of the initial corridor. However, this seems reasonable, given that the topography of the initial corridor was flatter and wetter containing more diffuse drainages, whereas the currently proposed corridor is on higher ground with more defined drainages.

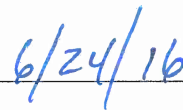
Mapped Waters of the U.S. are adjacent to perennial streams tributary to the Koyukuk River, the Wild River, and the John River (traditional navigable waters). Therefore, the mapped Waters of the U.S., consisting of 3,752 acres of wetlands and 58 acres of open water, are considered jurisdictional.

Verification and Certification Statement:

This desktop delineation of wetlands was conducted in accordance with the USACE 1987 Wetland Delineation Manual and the Alaska Region supplement.



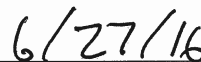
Lucas Gasek, PWS



Date

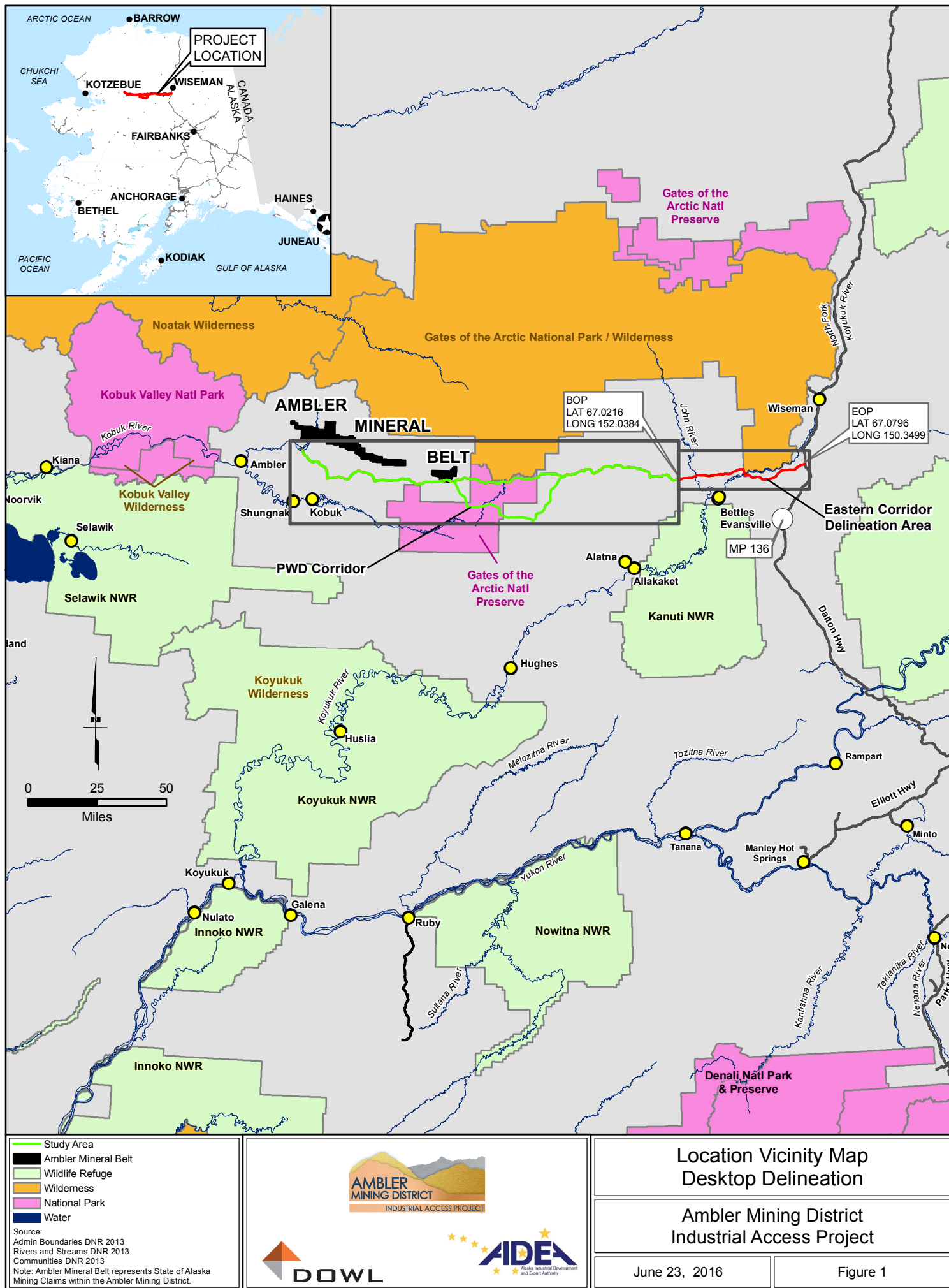


Adam Morrill



Date

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Exhibit 1

Staff Qualifications

Luke Gasek, PWS 2563: Luke has over six years of wetlands, water, and fish survey experience in Alaska. He has helped delineate over 200,000 acres in Alaska. Luke has certified expertise using aerial imagery and LiDAR data to delineate vegetation based on Cowardin, Viereck, and HGM classification systems. Luke has provided preliminary mapping, planned logistics, and developed field study and sampling protocols for several projects, including the AMDIAP. Luke has experience applying for U.S. Army Corps of Engineers 404 Permits, Alaska Department of Natural Resources Temporary Use of Water Permits, Alaska Department of Fish and Game Title 16 Fish Habitat Permits, and U.S. Coast Guard Section 9 Bridge permits. Prior to joining DOWL, Luke spent four years providing pre-mapping, field investigation, and post field data QA/QC for three large-scale projects: the 312-mile-long Donlin Pipeline near Aniak, the 102-mile-long Foothills West Transportation Access Project near Umiat, and the Livengood Gold Mine north of Fairbanks. Luke is also experienced in determining wetland functions using multiple assessment methods based on hydrogeomorphic position, and NWI classifications. Luke has also conducted numerous fisheries surveys including tower counts where he distinguished fish species visually from above, and beach seines and snorkel surveys to identify and classify adult and juvenile fish based on taxonomic keys.

Adam Morrill: Adam has over 10 years of experience conducting wetland delineations, Section 404 permitting, and developing wetland mitigation plans. Adam is familiar with wetland delineation protocols, aerial photo-interpretation, wetland functional assessments, hydrologic studies, and regulatory compliance. Adam led the field studies and wetland delineation for the AMDIAP Preliminary Wetland Delineation (PWD) report. He has conducted wetland delineations from Kiana to Fairbanks, to Anchorage, to Homer, to Kodiak, Alaska. Prior to joining DOWL, he worked for seven years at PEPG Engineering based in Utah as an environmental scientist, where he conducted more than 65 wetland delineation and Section 404 permitting projects.

His consulting experience also includes Phase I Environmental Site Assessments, Storm Water Pollution Prevention Plan preparation, and inspection of construction activities for a variety of transportation and site development projects. He has been involved in all aspects of the wetland mitigation process design, creation, and monitoring. He has conducted extensive debit-credit analysis for wetlands in the Municipality of Anchorage (MOA).

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Figure Set A
Color Wetland Maps

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Figure Set B
Black & White Wetland Maps

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