US Army Corps of Engineers
Alaska District

Regulatory Division (1145)
CEPOA-RD
Post Office Box 6898
JBER, Alaska 99506-0898

Public Notice of Application for Permit

PUBLIC NOTICE DATE:	**June 1, 2023**
EXPIRATION DATE:	**June 30, 2023**
REFERENCE NUMBER:	**POA-2023-00027**
WATERWAY:	**Ublutuoch River**

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this public notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the project manager's email as listed below or to regpagemaster@usace.army.mil. All comments should include the public notice reference number listed above.

All comments should reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Janet Post at (907) 753-2831, toll free from within Alaska at (800) 478-2712, or by email at janet.l.post@usace.army.mil if further information is desired concerning this public notice.

APPLICANT: Kuukpik Corporation, Attention: Willow Hetrick, 582 East 36th Avenue, Alaska 99503, (907) 333-9085

AGENT: ASRC Consulting and Environmental, LLC, Attention: Joseph Christopher, 3900 C Street, Suite 701, Anchorage, Alaska 99503, (907) 339-5483

LOCATION: The project site is located at Latitude 70.180444º N, Longitude 151.66683º W; North Slope Borough; from Conoco Phillips Alpine CD-1, drive southwest to GMT2/MT7 pad. The proposed K2 pad is approximately 0.25 mile west of GMT2/MT7 along the north side of the road; 16 miles west of Nuiqsut, Alaska.

PURPOSE: The applicant's stated purpose is to construct a 32.68 acre gravel pad to provide a storage and laydown space to support oil and gas exploration and development in the region.

PROPOSED WORK: Discharge 400,000 cubic yards of clean, gravel fill into 32.48 acres of wetlands and 0.20-acre of uplands to construct a 32.68 acre gravel pad. All work would be performed in accordance with the enclosed plan (sheets 1-6), dated December 13, 2022.

ADDITIONAL INFORMATION:

Agency	Permits, Approvals, and Other Requirements
Federal Agencies	
United States Army Corps of Engineers	• CWA Section 404 Permit
United States Environmental Protection Agency	• Reviews during the USACE Section 404 permitting process
United States Fish and Wildlife Service	• Consultation with USACE under Section 7 of the ESA
State Agencies	
Alaska Department of Natural Resources	• Cultural Resource Coordination/Consultation with State Historic Preservation Officer under NHPA Section 106
Alaska Department of Natural Resources Division of Mining, Land and Water, Water Resources Section	• Temporary Water Use Authorizations • Water Rights
Alaska Department of Fish and Game	• Public Safety Permit
Alaska Department of Environmental Conservation	• CWA Section 401 Water Quality Certification • CWA Section 402 APDES permit
Local Entities	
North Slope Borough	• Iñupiat History, Language, and Culture Division: Traditional Land Use Inventory Clearance • Development Permits • Administrative Approvals
Kuukpik Corporation	• Land Use Authorization for facilities constructed on Kuukpik land
Native Village of Nuiqsut	• Executive Order 13175 Tribal Consultation

APPLICANT PROPOSED MITIGATION: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

Avoidance: The entire project area contains jurisdictional waters of the United States; therefore, complete avoidance is not practicable. Kuukpik proposes to include the following practicable avoidance measures. No fill will be placed in documented locations of Endangered Species Act listed bird species. Fill will be placed during winter months when migratory birds are not present. The pad expansion will avoid placement of gravel near documented polar bear dens and denning habitat. Project limits will be delineated with silt fencing or similar material to avoid impacts outside the proposed pad area. Fuel will not be stored and fueling would not occur within 100 feet of the tundra. K2 pad will be connected at grade to existing infrastructure to avoid additional placement of fill in wetlands. Kuukpik will utilize currently permitted gravel sources to avoid opening a new mine site

Minimization: Kuukpik will incorporate the following minimization measures into project design and construction to reduce overall impacts on waters of the United States. Construction would occur during frozen ground conditions. The pad will have a minimum thickness of 5-feet to insulate underlying permafrost. The pad will be constructed with a minimum 2:1 (vertical:horizontal) side slopes to minimize fill area and impacts to wetlands. Regular pad surface watering will occur during operation to minimize fugitive dust deposition to the tundra. The wetlands proposed for impact have already experienced a reduction function in the form of direct and indirect impacts from surrounding development. Kuukpik selected this location to minimize overall functional impacts in the watershed.

Compensatory Mitigation: The project is not located in rare, difficult to replace, or threatened wetlands or areas of designated Critical Habitat. The project does impact greater than 1/10th acre of wetlands, however, the single watershed in which the proposed project is located is not significantly deteriorated. The proposed total permanent fill for the project, combined with existing disturbance, would result in a maximum new percent disturbance of 0.23% to the watershed. The project is located outside the Colville River Delta and does not impact any intertidal waters associated with special aquatic sites. No fill would occur in, or within 500-feet of, anadromous waters. The closest anadromous water (Ublutuoch River) is located 1.75 miles south. The project is not federally funded. The project is not a large-scale project with adverse aquatic resource impacts. Therefore, Kuukpik is not proposing compensatory mitigation at this time. If the U.S. Army Corps of Engineers (Corps) determines compensatory mitigation is necessary, Kuukpik will work with Corps to identify a practicable compensatory mitigation solution.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are no cultural resources in the permit area or within the vicinity of the permit area. The permit area has been determined to be the proposed project footprint and the adjacent area where heavy construction equipment may operate. Consultation of the AHRS constitutes the extent of cultural resource investigations by the Corps at this time, and we are otherwise

unaware of the presence of such resources. The Corps has made a No Historic Properties Affected (No Effect) determination for the proposed project. This application is being coordinated with the State Historic Preservation Office (SHPO), Federally recognized Tribes, and other consulting parties. Any comments SHPO, Federally recognized Tribes, and other consulting parties may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work. The Corps is requesting the SHPO's concurrence with this determination.

ENDANGERED SPECIES: The project area is within the known or historic range of the polar bear (*Ursus maritimus*), the spectacled eider (*Somateria fischeri*), and the Steller's eider (*Polysticta stelleri*).

We are currently gathering information regarding these species and have yet to make a determination of effect. Should we find that the described activity may affect the species listed above, we will follow the appropriate consultation procedures under section 7 of the Endangered Species Act of 1973 (87 Stat. 844). Any comments the U.S. Fish and Wildlife Service or the National Marine Fisheries Service (NMFS) may have concerning endangered or threatened wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Act of 1996, requires all federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

The project area is not within mapped EFH. We have determined the described activity would not adversely affect EFH in the project area.

TRIBAL CONSULTATION: The Corps fully supports tribal self-governance and government-to-government relations between Federally recognized Tribes and the Federal Government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Corps, Alaska District, on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This public notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the federal decision-making process regarding the protected Tribal rights or resources. Consultation may be initiated by the affected Tribe upon written request to the District Commander during the public comment period.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may

have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

AUTHORITY: This permit will be issued or denied under the following authority

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings are enclosed with this public notice.

District Commander
U.S. Army, Corps

Enclosure

PROJECT DESCRIPTION

Kuukpik K2 Pad Project

Kuukpik Corporation
582 E. 36th Avenue, Suite 600
Anchorage, AK 99503

December 2022

Table of Contents

USACE Permit Figures

1.0 APPLICANT

Kuukpik Corporation
P.O. Box 89187
Nuiqsut, AK 99789-0187

For expedient handling of all correspondence related to this project, the Kuukpik Corporation's Anchorage office is hereby designated as the mailing location for this project. Contact information is provided below:

Kuukpik Corporation
582 East 36th Avenue, Suite 600
Anchorage, AK 99508

Point of Contact: Mark Wiggin
Direct: (907) 244-5401
E-mail: mwiggen@kuukpik.com

Point of Contact: Willow Hetrick
Direct: (907) 330-9085
E-mail: willow@kuukpik.com

2.0 PROJECT OVERVIEW

Kuukpik Corporation (Kuukpik) is proposing to construct a new gravel pad along the north side of ConocoPhillips Alaska, Inc. (CPAI) Greater Mooses Tooth 2/Mooses Tooth 7 (GMT2/MT7) Access Road (Figure 1). This project is being called K2 Pad, and will include a new 32.68-acre gravel pad with two access drives located on the southeast and southwest corner of the pad, respectively.

The K2 Pad will involve placement of gravel fill abutting existing infrastructure to support oil and gas operations in the Moose Tooth Unit and other units as development progresses. 32.48-acres of jurisdictional wetlands and 0.20-acres of non-jurisdictional uplands as defined by the U.S. Army Corps of Engineers (USACE) will be directly impacted/lost as a result of this project. Since the project is located in waters of the U.S. (i.e., wetlands), issuance of a USACE Section 404 permit is necessary to perform this project. Construction is anticipated to start during the winter of 2024 and re-worked during the 'summer' season of 2024 (summer and fall). Re-working will not require any additional fill; construction crews will use road-building equipment to grade the gravel for subsequent use. If gravel placement is delayed or deferred in the winter of 2024, it is expected to occur in the next winter season (i.e., winter of 2025) with compaction occurring in the following summer-fall.

Specific K2 Pad acreage of fill and existing fill in the 12-digit HUC watershed (HUC 12) are provided in Table 1. Total acreage listed are final grade estimates.

Table 1: Fish Creek (190602050703)

Total HUC 12 Acreage	36,964.73
Existing Impacts Acreage	52.48
Proposed K2 Pad Impact Acreage	32.68
Total Watershed Impact Acreage	85.16
% Total Impact Footprint in HUC 12	0.23%

The maps and drawings included with this document provide additional details on the project components. No utility services (e.g., water, sewer, electricity, etc.) or permanent camp/lodging facilities are planned for any portion of the K2 Pad at this time.

3.0 PROJECT LOCATION

The K2 Pad area is located within the North Slope Borough (NSB) and the National Petroleum Reserve- Alaska (NPR-A) on lands selected by Kuukpik for conveyance. The project is located approximately 15-miles west of the Village of Nuiqsut, Alaska and immediately the east of the CPAI's GMT2/MT7 production pad. The USACE permit figures Sheets 1 through 6 show the K2 Pad location and typical cross section. The two proposed K2 Pad access points will connect directly to the GMT2/MT7 Access Road via a short gravel driveway. The project is not located on or near any Native allotments, cabins, or campsites. Location data is provided in the following table:

Table 2: Project Location Information

Project Name	Latitude	Longitude	MTRS	USGS Quadrangle
K2 Pad	70.180444	-151.66683	T10N R6E S32 & 33 Umiat Meridian	Harrison Bay A-3

4.0 PROJECT PURPOSE AND NEED

The purpose of the K2 Pad gravel pad is to provide storage for staging of equipment and materials related to the recent oil and gas development activities associated with the Moose Tooth Unit. It may also be used to place temporary camps that may operate for extended periods or that need to be stored in summer months. The pad construction will support current and future exploration and development activities, as well as other business needs by Kuukpik subsidiaries and joint venture entities. There is an immediate need for additional storage space to support winter 2024/2025 construction. Therefore, Kuukpik desires to initiate construction in February 2024 to allow for one season of gravel 'seasoning' and re-working prior to the winter of 2024/2025.

5.0 DEVELOPMENT SCHEDULE

The proposed schedule developed by Kuukpik is highly dependent on obtaining necessary permit authorizations, weather and associated factors of gravel mining, movement, and placement. Gravel will be obtained from a currently permitted mine site. Kuukpik is not proposing to open a new mine site for this activity. Kuukpik subsidiary Nanuq, Inc. will be performing the gravel mining, transport, placement, and rework activities for this project. Gravel will be transported to the K2 Pad location via ice roads and existing gravel road infrastructure. The gravel is proposed to be placed in the winter of 2024, perhaps as early as February 2024 and will be turned over and compacted as needed in the 3rd and/or 4th quarters of 2024 to finalize the construction and prepare the area for use during the winter of 2024/2025.

In summary, the development schedule is as follows:

- 4th quarter 2023 – 1st quarter of 2024: Obtain permit authorization and conduct final survey activities for project components
- February - April of 2024: Gravel haul and placement
- 3rd – 4th quarter of 2024: Re-work gravel and complete proposed project

If gravel placement does not occur in February - April 2024, Kuukpik's plans would be delayed until the following winter season of 2025 and would begin work after that time.

6.0 PROJECT COMPONENTS

The K2 Pad will require the fill of 32.48-acres of Waters of the U.S and 0.20-acres in uplands associated with the GMT2/MT7 access road. The location and design of the K2 Pad is shown on the attached USACE Sheets 1 through 6. The K2 Pad will be constructed with a minimum gravel fill depth of 5 feet, using 2V:1H side slopes to provide thermal protection for the underlying permafrost and reduce the fill footprint to the minimum necessary to accomplish the purpose and need. The total 32.68-acre pad will involve 400,000 cubic yards of gravel fill material.

The K2 Pad size and location were selected after consideration and evaluation of the following factors:

- Location of existing infrastructure
- Land ownership
- Archaeological and cultural resources
- Local hydrology
- CPAI operational needs
- Nanuq, Inc. (Kuukpik subsidiary) current storage and operational needs
- Footprint minimization for pad access capabilities
- Projected future storage needs by Kuukpik subsidiaries and other entities
- Subsistence activities

6.1 MATERIAL SITE

Kuukpik anticipates the gravel material will be available when construction commences, therefore, the project will not involve the development of a new material source.

6.2 CAMP REQUIREMENTS

No permanent camp or lodging facilities are being proposed or constructed as part of the K2 Pad project. All construction crews associated with this project will be housed at existing facilities.

6.3 Equipment Requirements

A list of all equipment (type and size) that will be a part of the construction project is provided below.

Table 3: Equipment List

Number	Type of Equipment	Approximate Weight (in pounds)
2	Excavator	10,000 ea.
2	Loader	100,000 ea.
2	Bulldozer	140,000 ea.
10	Dump Trucks	65,000 ea.
2	Vibratory rollers	40,000 ea.
1	Motor grader	70,000
1	Service truck	65,000
1	Fuel truck	50,000
4	Light Duty Vehicles	8,000 ea.
5	Light Plants	1,000 ea.

7.0 FUEL STORAGE

Fuel may be temporarily stored at the K2 Pad location in support of various operations, such as equipment staging or temporary camp locations per NPR-A IAP best management practice A-5. Fuel will be stored 500 feet away from the edge of the pad/from water bodies. Secondary containment for all fuel storage tanks will be a minimum of 100% of the volume of the single largest tank plus at least 10% additional volume for precipitation. Manifolded tanks without isolation valves will be treated as a single tank for secondary containment calculation requirements. Additional information regarding fuel tanks and spill prevention are provided in Section 9 of this document.

8.0 TRAINING

Kuukpik and its Kuukpik subsidiary, Nanuq, Inc., require all its North Slope employees and contractors involved in field construction activities to have the minimum level of applicable Federal, State, and/or local training for the specific activities or tasks being performed. Individuals working in the field on the K2 Pad will have completed the 8-hour unescorted training program

provided by the North Slope Training Cooperative (NSTC), a Nanuq, Inc. orientation program, and numerous other job specific or site-specific training.

9.0 CONTINGENCY PLANS

Kuukpik' s subsidiary, Nanuq, Inc., has an existing oil discharge prevention and contingency plan (ODPCP) that covers its fuel storage tanks located in Nuiqsut. These tanks, which have a combined capacity of about 70,000 gallons of diesel, are slated for fuel storage for the K2 Pad project. No amendments to this plan are currently proposed for this project. The Nanuq, Inc. ODPCP complies with the Alaska Department of Environmental Conservation (ADEC) requirements in 18 AK Administrative Code (AAC) Part 75. Nanuq, Inc. also has a spill prevention control and countermeasure (SPCC) plan associated with its fuel storage tanks in Nuiqsut. The SPCC plan complies with federal EPA regulations set forth in 40 Code of Federal Regulations (CFR) Part 112. These plans document Nanuq, Inc.'s abilities and procedures to prevent oil and hazardous materials spills. They also document response actions in the event of a spill of oil and/or hazardous materials.

10.0 WILDLIFE ACCESS

The K2 Pad will not result in any barriers to wildlife access or movement other than the physical presence of the K2 Pad gravel. Kuukpik subsidiary Nanuq, Inc. has an existing wildlife avoidance and interaction plan that will be utilized for construction and future storage activities as necessary. This plan can be provided upon request.

11.0 SNOW REMOVAL

Kuukpik recognizes the importance of performing snow removal activities in a manner that minimizes gravel carry over to the surrounding tundra. Snow removal from the K2 Pad will incorporate the existing Snow Removal Plan for the Kuukpik Pad (located at the Nuiqsut Spur Road and CD5 access road junction), and Best Management Practices to minimize gravel removal from the K2 Pad will be utilized.

12.0 WASTE DISPOSAL

Non-burnable wastes generated during the construction of the K2 Pad will be recycled or trucked and disposed of at the Nuiqsut dump. Food wastes from construction activities will either be incinerated at approved facilities or disposed of at Alpine.

After the K2 Pad is completed, there are no long-term waste disposal needs envisioned from operations on the pad. There may be a need for some limited disposal of non-burnable wastes or food wastes resulting from storage or temporary camp activities at the storage pad. Those situations will be dealt with on a case-by-case basis. In any event, all wastes will be properly disposed of in facilities approved for the waste disposal need.

13.0 AIR EMISSIONS

Air emissions from the equipment used for the construction of the K2 Pad are characterized as non-point mobile sources. No specific construction or operating air permits are required from

the Alaska Department of Environmental Conservation. The equipment slated for use for the K2 Pad includes bulldozers, loaders, gravel haul trucks, light duty vehicles, light plants, and other similar emission sources. These emission sources are standard equipment that have been used on numerous other North Slope construction projects in the past.

There may be temporary air emissions from camps that may operate at this pad. Specific camps will be permitted, as required, with the Alaska Department of Environmental Conservation under the MG2 Portable Oil and Gas Operations (North Slope).

14.0 ARCHAEOLOGICAL AND CULTURAL RESOURCES

An archaeological and cultural resource survey clearance of the GMT2/MT7 Access Road and drill site, which includes the proposed gravel pad area, was conducted previously as part of CPAI's permitting process. Kuukpik (with assistance from CPAI) will clear the area using the NSB's traditional land use inventory. Kuukpik will seek approval from the North Slope Borough Inupiat History, Language and Culture (IHLC) division documenting the absence of critical sites in the project area. Additionally, there are no Native allotments, cabins, or campsites near the K2 Pad area. Hence, it is unlikely that such resources would be impacted by the proposed project activities. The NSB, State, and local entities will be notified immediately if prehistoric, historic, cultural, traditional, paleontological, or archaeological sites or objects are discovered. Project work in that specific area would be suspended and buffered pending receipt of guidance from the applicable agencies and entities.

15.0 EROSION CONTROL

The location of the K2 Pad is outside of the Colville River Delta and not impacting any lakes or streams, erosion is not anticipated in the project area. However, once the K2 Pad is completed and seasoned, an assessment of the need for erosion control will be conducted periodically (e.g., at breakup, etc.). Additional measures will be implemented as appropriate based on Kuukpik's evaluation of this erosion control assessment.

16.0 ADDITIONAL ENVIRONMENTAL INFORMATION

The wetlands habitats in the project area have been classified by the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) as palustrine emergent and palustrine emergent/shrub complex wetlands that are ubiquitous to local wetlands habitat in the Arctic Coastal Plain. The project is not located in designated critical habitat. A desktop wetlands delineation, Aquatic Sites Assessment and debit calculation have been completed, and are in Attachment A of this document.

Prior to construction, Kuukpik will coordinate with the Alaska Department of Fish and Game (Department) regarding known grizzly bear denning locations to avoid these locations by creating a 0.5-mile buffer around known dens. Collared grizzly bears on the North Slope are tracked by the Department and known den locations are confirmed in the late winter/early spring by various methods. Kuukpik will also perform FLIR studies on bear dens in the area in order to mitigate

impacts to denning polar bears. Table 4, below, shows all of the anticipated approvals required to contract K2 Pad

Table 4. Key Permits, Approvals, and Other Potential Requirements for Project

Agency	Permits, Approvals, and Other Requirements
Federal Agencies	
United States Army Corps of Engineers	• CWA Section 404 Permit
United States Environmental Protection Agency	• Reviews during the USACE Section 404 permitting process
United States Fish and Wildlife Service	• Consultation with USACE under Section 7 of the ESA
State Agencies	
Alaska Department of Natural Resources	• Cultural Resource Coordination/Consultation with State Historic Preservation Officer under NHPA Section 106
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Local Entities	
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Kuukpik Corporation	• Land Use Authorization for facilities constructed on Kuukpik land
Native Village of Nuiqsut	• Executive Order 13175 Tribal Consultation

17.0 Applicant Mitigation Statement

Avoidance

The entire project area contains jurisdictional waters of the United States; therefore, complete avoidance is not practicable. Kuukpik proposes to include the following practicable avoidance measures:

- No fill will be placed in documented locations of ESA-listed bird species
- Fill will be placed during winter months when migratory birds are not present
- The pad expansion will avoid placement of gravel near documented polar bear dens and denning habitat
- Project limits will be delineated with silt fencing or similar material to avoid impacts outside the proposed pad area
- Fuel will not be stored, and fueling would not occur within 100 feet of the tundra
- K2 pad will be connected at grade to existing infrastructure to avoid additional placement of fill in wetlands
- Kuukpik will utilize currently permitted gravel sources to avoid opening a new mine site

Minimization

Kuukpik will incorporate the following minimization measures into project design and construction to reduce overall impacts on waters of the United States:

- Construction would occur during frozen ground conditions
- The pad will have a minimum thickness of 5-feet to insulate underlying permafrost
- The pad will be constructed with a minimum 2V:1H side slopes to minimize fill area and impacts to wetlands
- Regular pad surface watering will occur during operation to minimize fugitive dust deposition to the tundra
- The wetlands proposed for impact have already experienced a reduction function in the form of direct and indirect impacts from surrounding development. Kuukpik selected this location to minimize overall functional impacts in the watershed

Compensatory Mitigation

Kuukpik evaluated the unavoidable fill proposed for the K2 Pad project using the USACE Alaska District's Mitigation "Thought Process" document, which provides a crosswalk from the implementing regulations provided in 33 Code of Federal Regulations (CFR) Part 320.4(r)(2) to Alaska District internal guidance regarding the need for compensatory mitigation. In the "Thought Process", the Alaska District identifies six instances where compensatory mitigation may be required when:

1. The project occurs in rare, difficult to replace or threatened wetlands, or areas of designated Critical Habitat (i.e., Cook Inlet Beluga whale designated critical habitat);
2. The project impacts more than 1/10th acre of wetlands and/or other waters of the United States or 300-linear feet of stream, AND the watershed condition is such that compensatory mitigation is necessary to offset the project's unavoidable effects. Situations that can indicate degradation of the watershed's aquatic environment can include, but are not limited to, waters listed as impaired, or Clean Water Act (CWA) section 203(d) listed waterbodies, identification in a watershed management plan, impervious surface cover, developed land use, etc.,
3. Fill is placed in intertidal waters associated with special aquatic sites,
4. Fill is placed in fish bearing waters and jurisdictional wetlands within 500-feet of such waters when impacts are determined to be more than minimal,
5. The project is federally funded, so compensatory mitigation is required under Executive Order 11990 to meet the national policy of no net loss of wetlands; and,
6. Large-scale projects with adverse aquatic resource impacts (e.g., mining development, highway, airport, pipeline, and railroad construction projects [33 CFR 320.4(r)(2)] (i.e., bridge that results in substantial loss of intertidal habitat).

Kuukpik performed the "Thought Process" using the maximum estimated footprint for all project features. Kuukpik's response to each of the above six items are shown below:

1. The project is not located in rare, difficult to replace, or threatened wetlands or areas of designated Critical Habitat.
2. The project does impact greater than 1/10th acre of wetlands. However, the single watershed in which the proposed project is located is not significantly deteriorated. Additional information on that aspect is provided below.
3. The project is located outside the Colville River Delta and does not impact any intertidal waters associated with special aquatic sites.
4. No fill would occur in, or within 500-feet of, anadromous waters. The closest anadromous water (Ublutuoch River) is located 1.75-miles south.
5. The project is not federally funded.
6. The project is not a large-scale project with adverse aquatic resource impacts. Additional information on that aspect is provided below.

Rare, Difficult to Replace or Threatened Wetlands, or Designated Critical Habitat

Current Watershed Condition and Proposed Impacts

The proposed project will involve placing 32.68-acre permanent gravel fill in the Fish Creek 12-digit HUC Code watershed.

As shown in Table 5, the proposed total permanent fill for the project, combined with existing disturbance, would result in a maximum new percent disturbance of 0.23% to the watershed. Existing disturbance in the watershed includes direct gravel placement and tundra scars from legacy ice roads and pads A figure showing these impacts is located in Appendix A. Kuukpik's proposed project would only contribute an additional 0.08% disturbance to that watershed.

Table 5: Total Watershed Disturbance

Watershed (10-digit HUC)	Total Watershed (Acres)	Existing Disturbance (Acres)	New K2 Pad Disturbance (Acres)	New K2 Pad Disturbance (%)	Total Disturbance (%)
Fish Creek (190602050703)	36,964.73	52.48	32.68	0.09	0.23

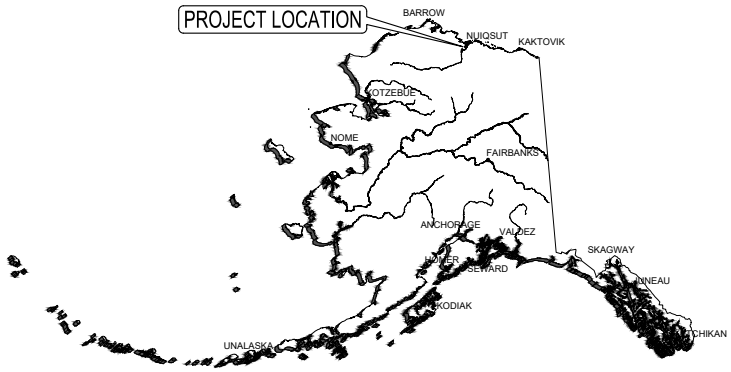
Project Scale and Impact Severity

As shown above in Table 5, constructing the project will result in 0.09% total new disturbance in the HUC. The new total disturbance across the HUC would be 0.23%. Kuukpik has incorporated several project design features and adopted avoidance and minimization measures into the project to avoid adverse aquatic resource impacts, while still meeting the overall project purpose and need. The avoidance and minimization in combination with the size of the overall watersheds and number of wetlands in those watersheds will result in minor overall impacts to aquatic resources. There are currently no In-Lieu Fee or approved mitigation banks with service areas that cover the proposed impacts from this project.

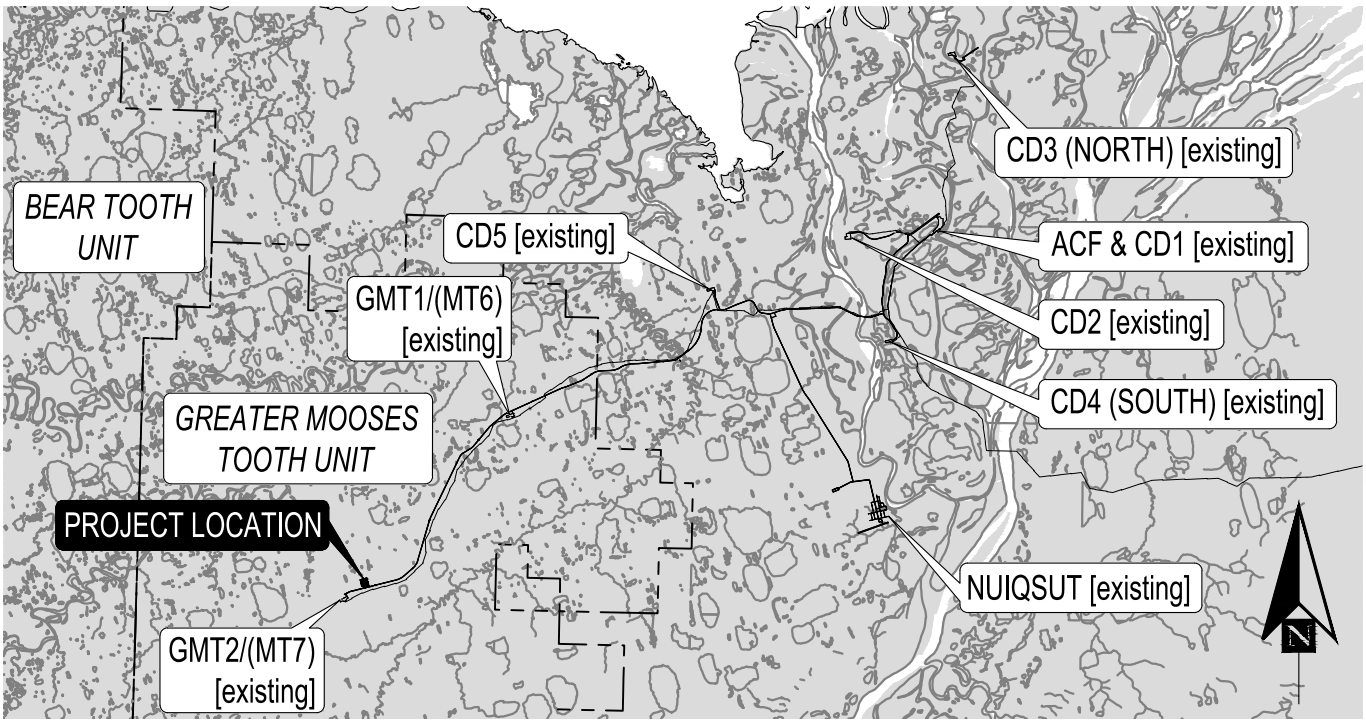
Additionally, as shown in the attached Aquatic Site Assessment, the wetlands proposed for impact have already experienced both direct and indirect impacts from pervious activities and are not functioning at their full potential.

Based on the above results of applying the "Thought Process" combined with the project's proposed avoidance and minimization measures, additional compensatory mitigation for the 32.48-acres of jurisdictional wetlands does not appear necessary; Therefore, Kuukpik is not proposing additional compensatory mitigation at this time. If the USACE determines compensatory mitigation is necessary, Kuukpik will work with USACE to identify a practicable compensatory mitigation solution.

USACE Permit Figures



ALASKA VICINITY MAP



VICINITY MAP

SCALE IN MILES

3 0 3 6 9

PND ENGINEERS, INC.

PURPOSE:
CONSTRUCT GRAVEL PAD FOR OILFIELD SUPPORT

DATUM: BPMSL, NAD83 ASP ZONE 4

REFERENCE: POA-XXXX-XXXXX
POA-2023-00027

APPLICANT: KUUKPIK CORPORATION

LOCATION: S32/S33 T10N R2E
UMIAT MERIDIAN
LAT: 70° 10' 49.6"
LONG: 151° 40' 00.6"

PROPOSED: K2 PAD CONSTRUCTION

IN: GREATER MOOSES TOOTH UNIT

COUNTY: NORTH SLOPE BOROUGH
STATE: ALASKA

KUUKPIK VILLAGE CORPORATION
P.O. BOX 89187
NUIQSUT, AK 99789
(907) 480-6220
ATTN: JOE NUKAPIGAK

BURUEAU OF LAND MANAGEMAENT
1150 UNIVERSITY AVENUE
FAIRBANKS, AK 99709
ATTN: STEVE HARTMANN

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING LAND AND WATER
3700 AIRPORT WAY
FAIRBANKS, AK 99709
(907) 451-2705
ATTN: NICHELLE JONES

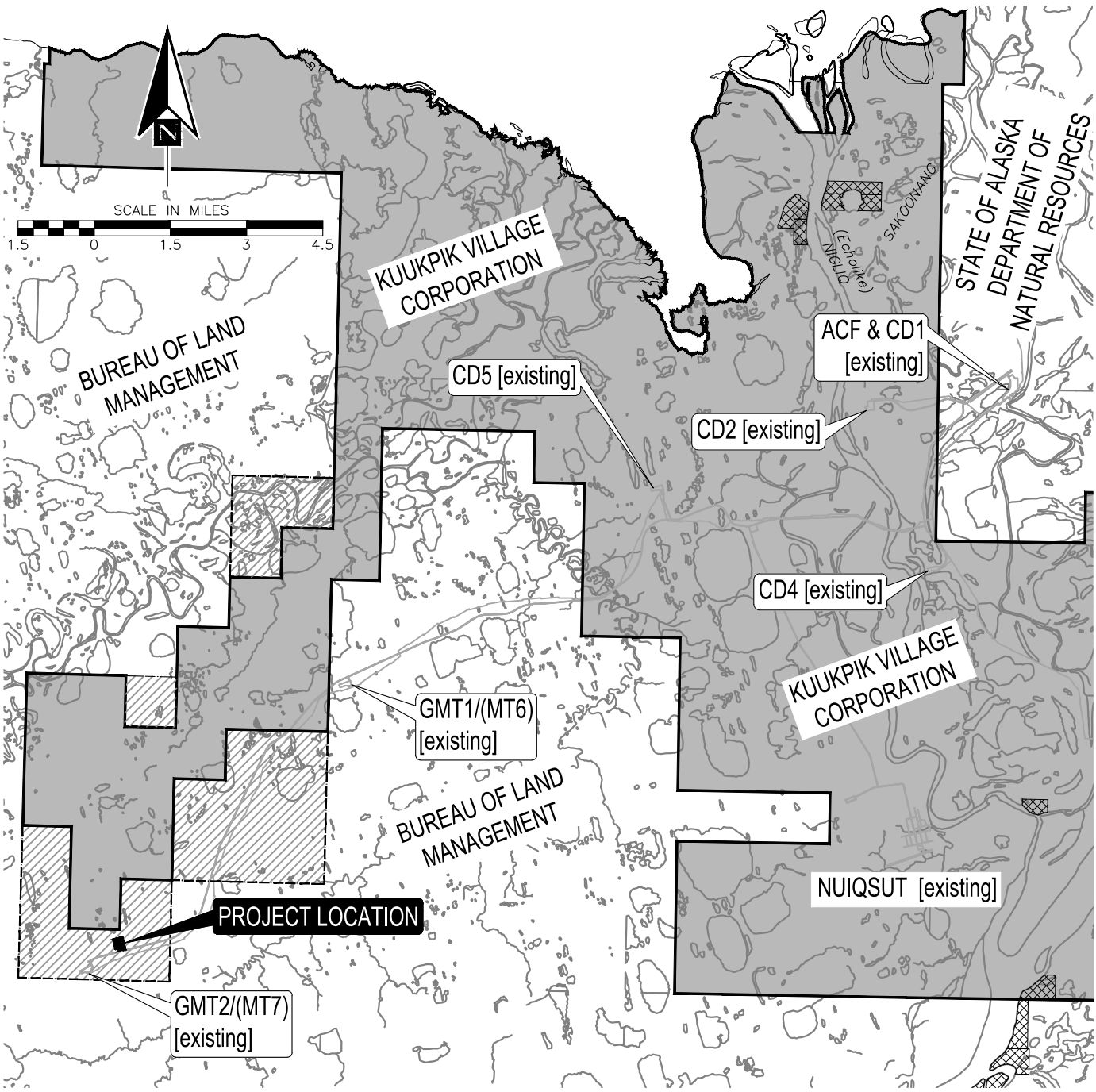
ARCTIC SLOPE REGIONAL CORPORATION
P.O. BOX 129
BARROW, AK 99723
ATTN: ERIK KENNING

ADJACENT LAND OWNERS

PND ENGINEERS, INC.

POA-2023-00027

REFERENCE:	POA-XXXX-XXXXX
APPLICANT:	KUUKPIK CORP.
PROPOSED:	K2 ROAD AND PAD CONSTRUCTION
AT:	ALASKA



ADJACENT LAND OWNERS MAP

LEGEND

- KUUKPIK VILLAGE CORPORATION – CONVEYED
- KUUKPIK VILLAGE CORPORATION – SELECTED LANDS
- NATIVE ALLOTMENT

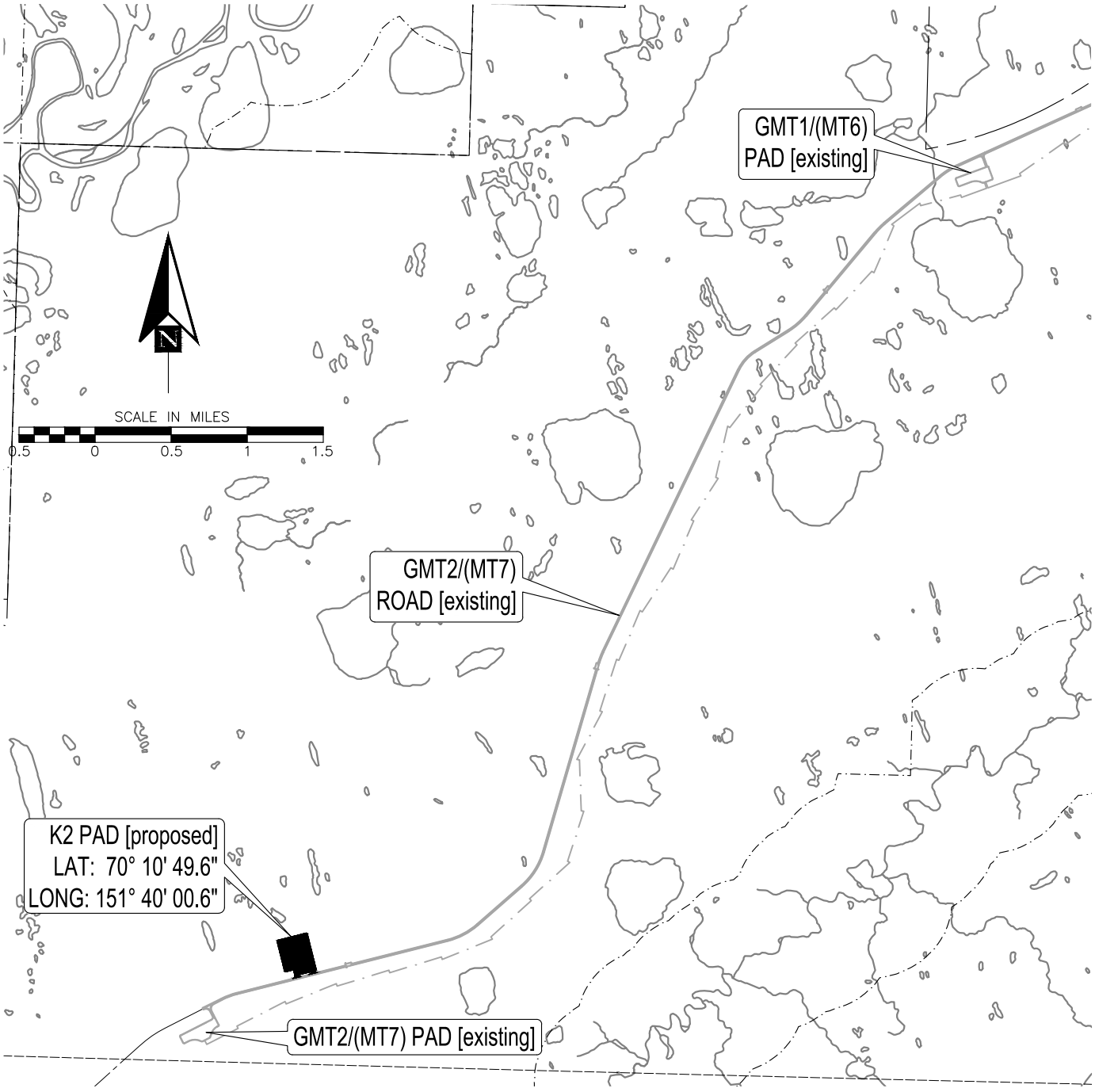
THIS MAP PROJECTION IS NAD 83, ALASKA STATE PLANE ZONE 4. THIS MAP IS BASED ON DATA PROVIDED BY THE U.S. GEOLOGICAL SURVEY AND THE ALASKA DEPARTMENT OF NATURAL RESOURCES.

PND ENGINEERS, INC.

REFERENCE: ~~POA-XXXX-XXXXX~~ POA-2023-00027
APPLICANT: KUUKPIK CORP.
PROPOSED: K2 ROAD AND PAD CONSTRUCTION

AT: ALASKA

SHEET 3 of 6 12/13/2022



PROJECT OVERVIEW

LEGEND

- EXISTING GRAVEL INFRASTRUCTURE
- EXISTING PIPELINE
- 1/2 MILE RIVER BUFFER
- 3 MILE FISH CREEK BUFFER
- RAPTOR PROTECTION AREA

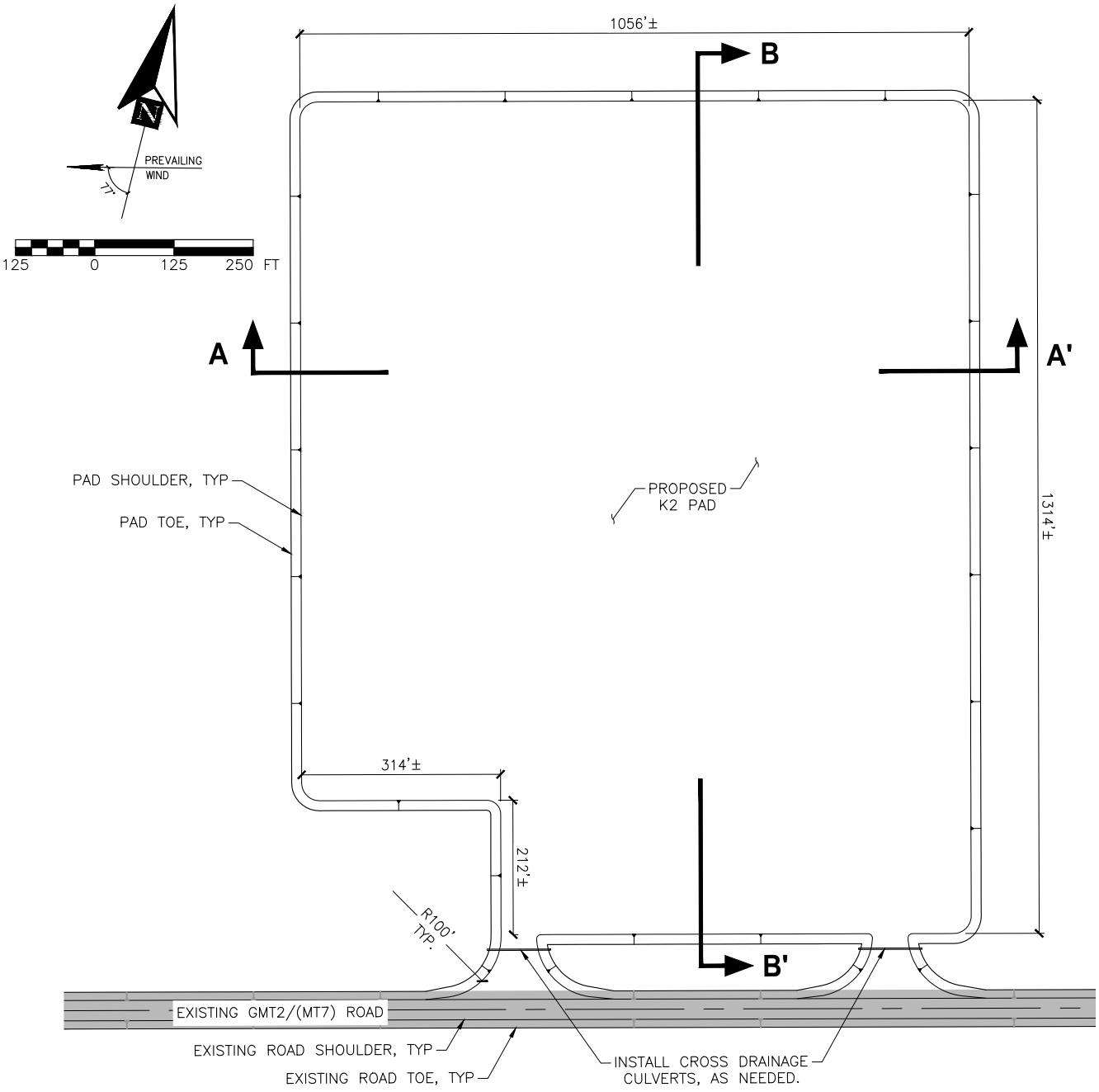
THIS MAP PROJECTION IS NAD 83, ALASKA STATE PLANE ZONE 4. THIS MAP IS BASED ON DATA PROVIDED BY THE U.S. GEOLOGICAL SURVEY AND THE ALASKA DEPARTMENT OF NATURAL RESOURCES.

PND ENGINEERS, INC.

REFERENCE: POA-2023-00027
APPLICANT: KUUKPIK CORP.
PROPOSED: K2 ROAD AND PAD CONSTRUCTION

AT: ALASKA

SHEET 4 of 6 12/13/2022



K2 PAD AND ACCESS ROAD QUANTITIES	
TOTAL PROJECT FOOTPRINT	32.5 ACRES
TOTAL PROJECT GRAVEL VOLUME	400,000 CY

NOTE:
1. MINIMUM GRAVEL DEPTH 5.0' WITH 2:1 FILL SLOPES, TYPICAL.
2. SEE SHEET 6 FOR TYPICAL SECTIONS..
3. CROSS DRAINAGE CULVERTS TO BE INSTALLED AT PAD ENTRANCES AS NEEDED. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED BASED UPON SITE DRAINAGE AND TOPOGRAPHY.

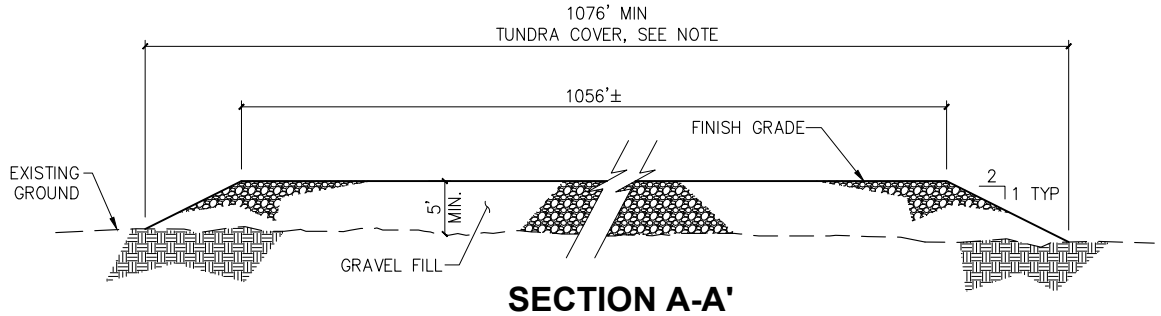
PROPOSED K2 PAD

PND ENGINEERS, INC.

REFERENCE: ~~POA-XXXX-XXXXX~~ POA-2023-00027
APPLICANT: KUUKPIK CORP.
PROPOSED: K2 ROAD AND PAD CONSTRUCTION

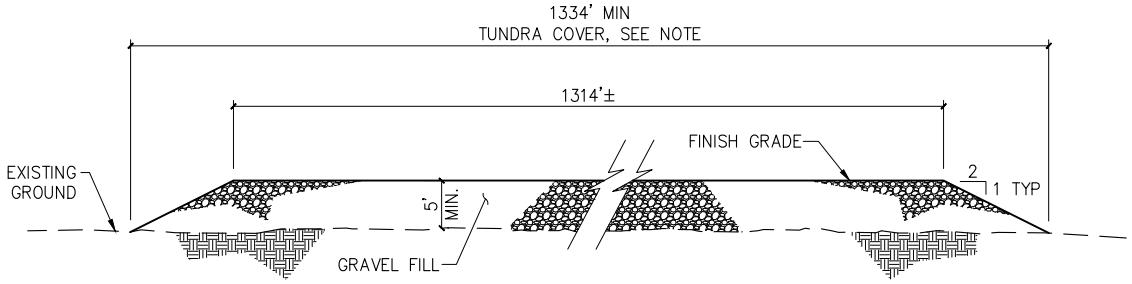
AT: ALASKA

 12/13/2022



SECTION A-A'
K2 PAD TRANSVERSE SECTION

NOT TO SCALE



SECTION B-B'
K2 PAD LONGITIDUNAL SECTION

NOT TO SCALE

NOTE:
1. FILL FOOTPRINT WILL VARY BASED UPON TOPOGRAPHY AND FINISH GRADE ELEVATION. HOWEVER, THE TOTAL PROJECT FOOTPRINT WILL NOT BE EXCEEDED.

PND ENGINEERS, INC.

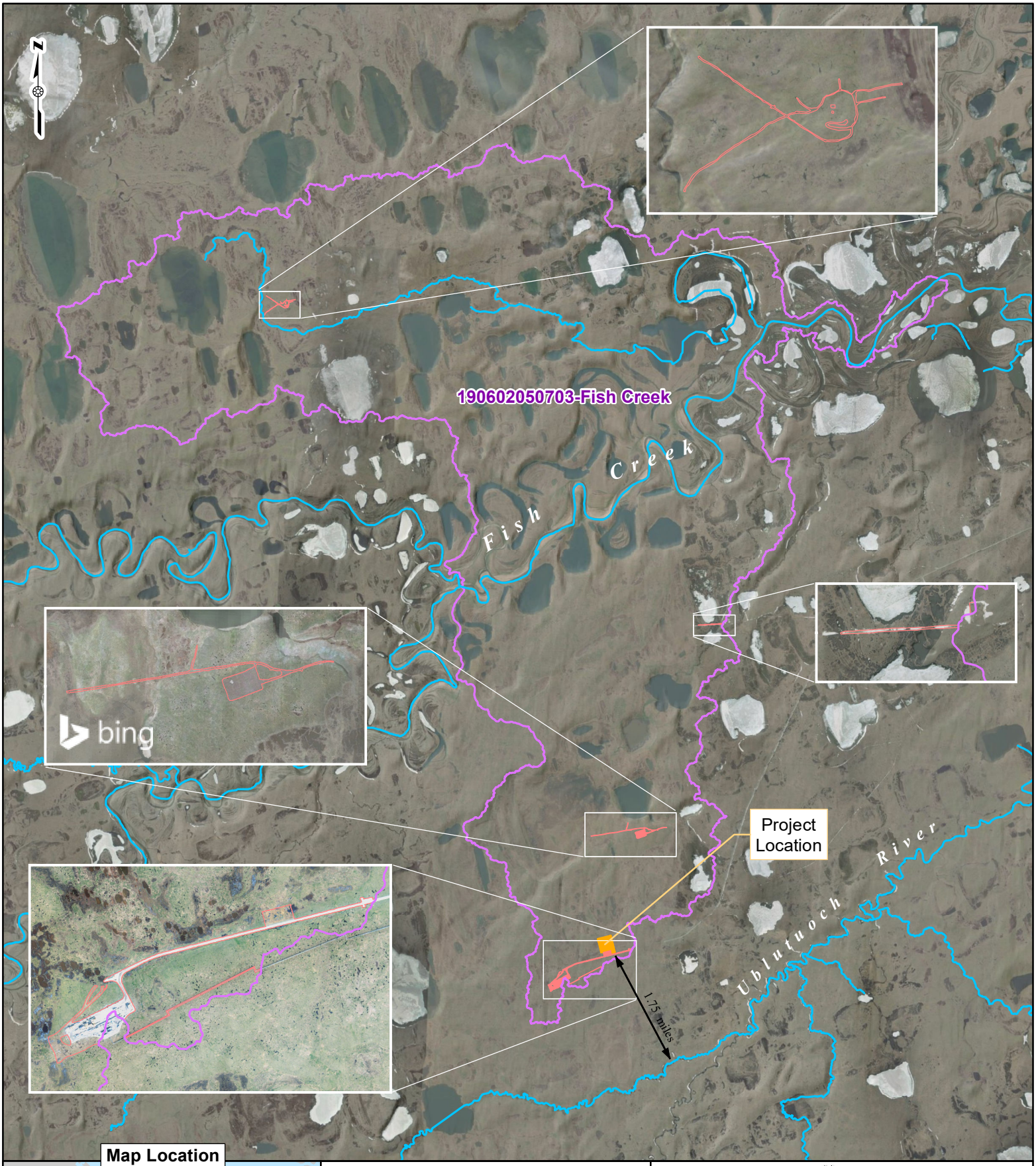
REFERENCE: POA-2023-00027
APPLICANT: KUUKPIK CORP.
PROPOSED: K2 ROAD AND PAD CONSTRUCTION

AT: ALASKA

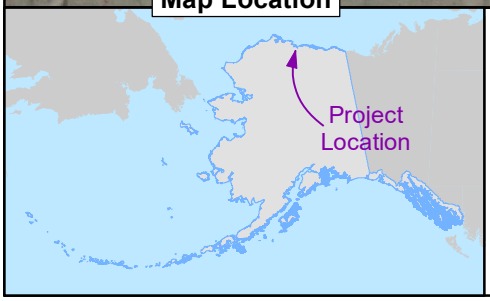
SHEET 6 of 6 12/13/2022

K2 PAD SECTIONS

Appendix A: Watershed Assessment Figure



Map Location



- K2 Pad
- Anadromous Stream
- HUC 12 Watershed Boundary
- Area of Anthropogenic Disturbance

ASRC Consulting & Environmental
a subsidiary of ASRC Energy Services

Kuukpik

HUC 12 WATERSHED ASSESSMENT

K2 Pad

K2 Pad 404 Application Watershed Assessment

SCALE: 0 1 2 3 Miles

FIGURE: 1

Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet

AES-RTS: 21-147-001, 12/12/2022

Appendix B: Aquatic Sites Assessment and Wetland Debit Calculation

NORTH SLOPE RAPID WETLANDS ASSESSMENT/ DEBIT ANALYSIS

Kuukpik Oilfield Services K2 Pad

Kuukpik Corporation

582 East 36th Avenue, Suite 600

Anchorage, AK 99503

December 2022

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Figures 1 – 8

Appendix A Alaska North Slope Rapid Wetland Assessment Desktop Data Sheets

ACRONYMS LIST

ASA	Aquatic Site Assessment
CPAI	ConocoPhillips Alaska, Inc.
FCI	Functional Capacity Index
GMT2/MT7	Greater Mooses Tooth 2/ Mooses Tooth 7
HGM	hydrogeomorphic
K2 Pad	Kuukpik Oilfield Services Pad
KOS	Kuukpik Oilfield Services
Kuukpik	Kuukpik Corporation
m	meter
NS Assessment Method	*Operational Draft Regional Guidebook for the Rapid Assessment of Wetlands in the North Slope Region of Alaska*
NWI	National Wetlands Inventory
USACE	U.S. Army Corps of Engineers
V_{DD}	evidence of dust deposition
V_{DR}	distance to roadway
V_{IH}	impediment to hydrology
V_{IW}	impediment to wildlife
V_{LD}	landscape disturbance
V_{LLD}	local landscape disturbance
V_{SW}	anthropogenically derived surface water
V_{TK}	evidence of thermokarst
WAA	Wetland Assessment Area
WOTUS	Waters of the United States

1.0 INTRODUCTION AND PURPOSE

The K2 pad development project (K2 Pad) is located on lands owned by the Kuukpik Corporation (Kuukpik), on the north side of the ConocoPhillips Alaska, Inc (CPAI) Greater Mooses Tooth 2 (GMT2) Mooses Tooth 7 (MT7) Access Road (Figure 1). To construct the K2 Pad, Kuukpik Oilfield Services (KOS) proposes the placement of 400,000 cubic yards (cy) of clean gravel fill material onto 32.48 acres of jurisdictional wetlands and 0.20 acres of uplands.

The proposed K2 Pad is located within the Arctic Coastal Plain physiographic region and within the National Petroleum Reserve-Alaska (NPR-A). The landscape is comprised of gently rolling hills, many shallow lakes and ponds, and wetlands resulting from poorly drained soils. As is typical on the North Slope, the project area is located on permafrost where the subsurface is perennially frozen.

The purpose of the K2 Pad is to provide storage and laydown space to support oil and gas exploration and development in the region. The development would provide benefits to local and state economies by creating local-hire jobs during construction and operation. The new pad would also provide income to the Kuukpik Corporation through lease revenues that would be distributed amongst its shareholders.

This aquatic site assessment (ASA) and debit calculation follows the methodologies found in the *Operational Draft Regional Guidebook for the Rapid Assessment of Wetlands in the North Slope Region of Alaska* (NS Assessment Method) (Berkowitz et al., 2017) and *Alaska District: Credit Debit Methodology, Version 1.0* (USACE, 2017). This ASA and debit calculation will serve to support U.S. Army Corps of Engineers (USACE) review of the proposed K2 Pad to determine the level and extent of impacts on the Waters of the United States (WOTUS), as well as assist in determining the need and amount of compensatory mitigation that may be required.

1.1 WOTUS Present at K2 Pad

The proposed K2 Pad is located on the North Slope of Alaska, within the United States Geological Survey Harrison Bay A-3 Quadrangle approximately 15 miles northwest of Nuiqsut, Alaska. The K2 Pad will abut, at-grade, to CPAI's GMT2/MT7 Access Road via two discreet driveways. The remainder of K2 Pad will be offset from the GMT2/MT7 Access Road to allow for natural surface drainage. The approximate center of the proposed K2 Pad is at N 70.180772, W –151.666267 (Figure 2).

Previous wetlands mapping associated with CPAI's GMT2/MT7 development (USACE 2018) was utilized for this ASA (Figure 2). A small area on the north side of the proposed K2 Pad was not covered by the CPAI mapping and was extrapolated using aerial imagery and best professional judgment. The mapping shows the project area totals 31.48 acres of jurisdictional wetlands and 0.20-acres of non-jurisdictional uplands. The uplands are associated with the abutting GMT2/MT7 Access Road. The wetlands present on site are part of a larger contiguous complex that abuts Fish Creek, a direct tributary that flows to the territorial waters of the Beaufort Sea. Table 1 identifies the types of wetlands present at the proposed K2 Pad location.

Table 1 Wetlands Mapping Summary

Wetland Type[1]	Acres
PEM1/SS1B- saturated persistent palustrine emergent/broad-leaved deciduous scrub-shrub	18.71
PEM1/SS1E- seasonally flood/saturated persistent palustrine emergent/broad-leaved deciduous scrub-shrub	8.84
PEM1F-semipermanantly flooded persistent palustrine emergent	4.93
Uplands (GMT2/MT7 Access Road)	0.20
Total	32.68

[1] POA-2015-486

2.0 AQUATIC SITE ASSESSMENT METHODS

2.1 Wetland Assessment Area Determination

A Wetland Assessment Area (WAA) represents unique wetland habitats in a proposed project area. According to the North Slope (NS) Assessment Method, more than one WAA can be selected, depending on:

- The number of representative hydrogeomorphic (HGM) classes
- Unique project features, and
- The relative disturbance regime (undisturbed or disturbed)

Once a representative WAA is evaluated, data collected in the WAA can be extrapolated over similar HGM classes within the entire project.

The area proposed for the K2 Pad is comprised of 27.55 acres of flat HGM class wetlands and 4.93 acres of Depressional class wetlands. The Flat HGM class wetlands consist of undisturbed and disturbed tundra. The direct disturbance to Flat wetlands is from a relict multi season ice pad scar immediately adjacent to the GMT2/MT7 Access Road. The Depressional wetlands are all currently undisturbed. The wetlands proposed for impacts are considered to have experienced indirect impacts from the abutting GMT2/MT7 Access Road and associated infrastructure.

2.2 Data Collection

One WAA data collection point was established to evaluate the area of currently disturbed Flat HGM class wetlands (WAA1) and two WAA data collection points (WAA2 and WAA3) were established to evaluate the undisturbed Flat and Depressional wetlands, associated with the fill placement planned for the K2 Pad. The WAA data collection points are shown in Figures 3 through 8.

Data were collected through a desktop analysis of the three representative WAA data collection points across the fill area. Data were collected at two spatial scales from the WAA data collection points: 80-meter (m) and 800-m radius areas. Plot radii of 80-m and 800-m were established around the WAA data collection points and divided into quarter segments (Figures 3 and 4 for WAA1, Figures 5 and 6 WAA2, Figures 7 and 8 WAA3). Data were collected from within these plot radii to determine the Functional Capacity Index (FCI) that is currently provided by the wetlands and to assist in determining the debit associated with the proposed project.

Data collected in the 80-m plot radius included the following:

- percent of the plot occupied by local landscape disturbance exhibited through anthropogenic disturbance/man-made features,
- percent of the plot occupied by anthropogenically derived surface water,
- number of quarter segments in the plot containing impediments to hydrology,
- evidence of dust accumulation in the plot (yes/no), and
- evidence of anthropogenically derived thermokarst in the plot (yes/no).

Data collected within the 800-m plot radius included the following:

- percent of the plot occupied by local landscape disturbance exhibited through anthropogenic disturbance/man-made features,
- number of quarter segments in the plot containing impediments to wildlife movement, and
- minimum distance to roadway (meters) of any size, class, or condition.

The data collected with respect to the above criteria were tabulated in an electronic data form (Appendix A) developed by the USACE. The output represents the wetland's FCI with respect to three primary functional classes: habitat, hydrology, and biogeochemical cycling.

The FCI scores for these functional categories are rated on a scale from 0 to 1 (0=Low, 1=High). The FCI scores for each of these three functional categories are then averaged into a final FCI score that, coupled with the acres of wetland impact to determine the project debits. The final FCI score is also used to support USACE permit review, inform project alternatives, assess unavoidable impacts, and aid in the determination of the need for compensatory mitigation.

3.0 K2 PAD PROJECT AQUATIC SITE ASSESSMENT FINDINGS AND RESULTS

Sections 3.1 through 3.3 describe findings from applying the NS Assessment Method to the three WAAs.

3.1 Wetland Assessment Area 1 - WAA1

This plot represents the 2.43 acres of disturbed Flat wetlands. The following sections describe the findings from the NS Assessment Method desktop analysis for the 80-m and 800-m plot radii depicted in Figures 3 and 4. The desktop data sheet for WAA1 is presented in Appendix A. Table 2 summarizes the pre-project FCI for each of the three functional categories for WAA1. The post-project FCI scores are assumed to be 0.0 because the area would be considered an upland habitat after construction. The following variables were utilized to determine assessment scores for three wetland functions (habitat, hydrology, and biogeochemical cycling at WAA1):

Variables assessed at the 80-m radius

1. **Local Landscape Disturbance (V_{LLD}) (80 m) –** Local landscape disturbance from a former multi season ice pad, the existing GMT2/MT7 Access Road, and associated infrastructure is present in 80 percent of the 80-m plot.

2. **Anthropogenically Derived Surface Water (V_{SW}) (80 m) –** Anthropically derived water encompasses 3 percent of the 80-m plot. This feature appears to be related to the former multi season ice pad.

3. **Impediment to Hydrology (V_{IH}) (80 m) –** There are currently two out of four quarter segments exhibiting an impediment to surface hydrology in the 80-m plot.

4. **Evidence of Dust Accumulation (V_{DD}) (80 m) –** No visual evidence of dust is observed in the 80-m plot.

5. **Evidence of Anthropogenic Thermokarst (V_{TK}) (80 m) –** Anthropogenic thermokarst is present as a result of the former multi season ice pad in the 80-m plot.

Variables assessed at the 800-m radius

6. **Landscape Disturbance (V_{LD}) (800 m) –** Local landscape disturbance from a former multi season ice pad, the existing GMT2/MT7 Access Road, and associated infrastructure is present in 3 percent of the 800-m plot.

7. **Impediment to Wildlife Movement (V_{IW}) (800 m) –** Wildlife movement is impeded by the GMT2/MT7 Access Road in two out of four quarter segments of the 800-m plot.

8. **Distance to Roadway (V_{DR}) (800 m**) – The GMT2/MT7 Access Road is located 34 meters from WAA1.

Table 2 WAA1 Functional Capacity Index Scores

Functional Category	FCI Score
Habitat	0.28
Hydrology	0.57
Biogeochemical Cycling	0.00
Average	0.29

Note:
FCI Score: 0=Low, 1=High

3.2 Wetland Assessment Area 2 - WAA2

This plot represents the 25.12 acres of undisturbed Flat wetlands. The following sections describe the findings from the NS Assessment Method desktop analysis for the 80-m and 800-m plot radii depicted in Figures 5 and 6. The desktop data sheet for WAA2 is presented in Appendix A. Table 3 summarizes the pre-project FCI for each of the three functional categories and the average pre-project FCI for WAA2. The post-project FCI is 0.0 because the area would be considered an upland habitat. The following variables were utilized to determine assessment scores for three wetland functions (habitat, hydrology, and biogeochemical cycling) at WAA2:

Variables assessed at the 80-m radius

1. **Local Landscape Disturbance (V_{LLD}) (80 m) –** No local landscape disturbance exists in the 80-m plot. This local disturbance is from the adjacent GMT2/MT7 Access Road and the location of the former multi season ice pad.

2. **Anthropogenically Derived Surface Water (V_{SW}) (80 m) –** There is currently no anthropogenically derived surface water in the 80-m plot.

3. **Impediment to Hydrology (V_{IH}) (80 m) –** There are currently no quarter segments exhibiting an impediment to surface hydrology in the 80-m plot.

4. **Evidence of Dust Accumulation (V_{DD}) (80 m) –** No visual evidence of dust is observed in the 80-m plot.

5. **Evidence of Anthropogenic Thermokarst (V_{TK}) (80 m) –** There are currently no quarter segments exhibiting anthropogenic thermokarst in the 80-m plot.

Variables assessed at the 800-m radius

6. **Landscape Disturbance (V_{LD}) (800 m) –** Landscape disturbance from the existing GMT2/MT7 Access Road is present in three percent of the 800-m plot.

7. **Impediment to Wildlife Movement (V_{IW}) (800 m) –** Wildlife movement is impeded by the GMT2/MT7 Access Road in two out of four quarter segments of the 800-m plot.

8. **Distance to Roadway (V_{DR}) (800 m**) – The GMT2/MT7 Access Road is located 250 meters from WAA2.

Table 3 WAA2 Functional Capacity Index Scores

Functional Category	FCI Score
Habitat	0.75
Hydrology	1.00
Biogeochemical Cycling	1.00
Average	0.92

Note:
FCI Score: 0=Low, 1=High

3.3 Wetland Assessment Area 3 - WAA3

This plot represents the 4.93 acres of undisturbed Depressional wetlands. The following sections describe the findings from the NS Assessment Method desktop analysis for the 80-m and 800-m plot radii depicted in Figures 7 and 8. The desktop data sheet for WAA3 is presented in Appendix A. Table 4 summarizes the pre-project FCI for each of the three functional categories and the average pre-project FCI for WAA2. The post-project FCI is 0.0 because the area would be considered an upland habitat. The following variables were utilized to determine assessment scores for three wetland functions (habitat, hydrology, and biogeochemical cycling) at WAA3:

Variables assessed at the 80-m radius

1. **Local Landscape Disturbance (V_{LLD}) (80 m)** – No local landscape disturbance exists in the 80-m plot.

2. **Anthropogenically Derived Surface Water (V_{SW}) (80 m) –** There is currently no anthropogenically derived surface water in the 80-m plot.

3. **Impediment to Hydrology (V_{IH}) (80 m) –** There are currently no quarter segments exhibiting an impediment to surface hydrology in the 80-m plot.

4. **Evidence of Dust Accumulation (V_{DD}) (80 m) –** No visual evidence of dust is observed in the 80-m plot.

5. **Evidence of Anthropogenic Thermokarst (V_{TK}) (80 m) –** No anthropogenic thermokarst is present in the 80-m plot.

Variables assessed at the 800-m radius

6. **Landscape Disturbance (V_{LD}) (800 m) –** Landscape disturbance from the existing GMT2/MT7 Access Road is present in three percent of the 800-m plot.

7. **Impediment to Wildlife Movement (V_{IW}) (800 m) –** Wildlife movement is impeded by the GMT2/MT7 Access Road in two out of four quarter segments of the 800-m plot.

8. **Distance to Roadway (V_{DR}) (800 m**) – The GMT2/MT7 Access Road is located 343 meters from WAA2.

Table 4 WAA3 Functional Capacity Index Scores

Functional Category	FCI Score
Habitat	0.75
Hydrology	1.00
Biogeochemical Cycling	1.00
Average	0.92

Note:
FCI Score: 0=Low, 1=High

4.0 K2 PAD PROJECT DEBIT ANALYSIS

A debit is a unit of measure representing the loss of aquatic functions at an impact site. The debit for the proposed K2 Pad follows the current Alaska District Credit Debit Methodology (USACE 2017) by multiplying the FCI delta score between pre-project and post-project conditions and the acres that would be impacted by the project. The current NS Assessment Method assumes that any post-project areas are considered upland and equate to a total loss of function (FCI=0.00); therefore, the post-project condition is assumed to be 0.00. Any uplands in the pre-project footprint are not jurisdictional, so they are scored at 0.00 as well and do not generate debits.

Table 5 shows the debits calculated for the K2 Pad Project using the FCI scores obtained from the NS Assessment Method and the Alaska District Credit Debit procedure. The total debit for filling 32.48 acres of jurisdictional wetlands is 28.33 debits.

Table 5 K2 Pad Project Debit Analysis

WAA	Acres	Average FCI Score[a] (Pre-project)	Average FCI Score[a] (Post-project)	FCI Delta	Debit
WAA1	2.43	0.29	0.00	0.29	0.70
WAA2	25.12	0.92	0.00	0.92	23.1
WAA3	4.93	0.92	0.00	0.92	4.53
Uplands	0.20	0.00	0.00	0.00	0.00
Totals	32.68				28.33

Note:
FCI Score[a]: 0=Low, 1=High

5.0 SUMMARY AND CONCLUSIONS

Kuukpik is requesting USACE authorization to construct the K2 Pad Project, which will result in placing fill into 32.48 acres of jurisdictional wetlands and 0.20 acres of non-jurisdictional uplands.

Kuukpik evaluated the wetlands debits incurred by the proposed K2 Pad Project by determining their current FCI using the NS Assessment Method published by the USACE, and applying the North Slope Credit Debit methodology. Using the NS Assessment Method, the 32.48 acres of jurisdictional wetlands within the project area are comprised of 27.55 acres of Flat and 4.93 acres of Depressional HGM class wetlands. An additional 0.20 acres of upland associated with the GMT2/MT7 Access Road will be filled as well.

The wetlands assessment determined the wetlands have a pre-project average FCI of 0.29 (WAA1), 0.92 (WAA2), and 0.92 (WAA3). The reduction in pre-project FCI scores is a result of current direct impacts from a former multi season ice pad, and indirect impacts associated with surrounding development from CPAI's GMT2/MT7 development project. The current NS Assessment methodology determined the post-project FCI equals 0.0 because the wetlands would be converted to upland habitat. Kuukpik incorporated the FCI score results into the Alaska District Credit Debit Methodology and determined that the K2 Pad Project would result in 28.33 debits.

6.0 REFERENCES

Berkowitz, J. F., N.R. Beane, K.D. Philley, M. Ferguson. 2017. *Operational Draft Regional Guidebook for the Rapid Assessment of Wetlands in the North Slope Region of Alaska*. U.S. Army Corps of Engineers, Engineer Research and Development Center.

United States Army Corps of Engineers (USACE). 2017. Alaska District: Credit Debit Methodology (Version 1.0).

USACE 2018. United States Army Corps of Engineers Permit POA 2015-486.

FIGURES

Figure 1 K2 Pad Project Site and Vicinity Map

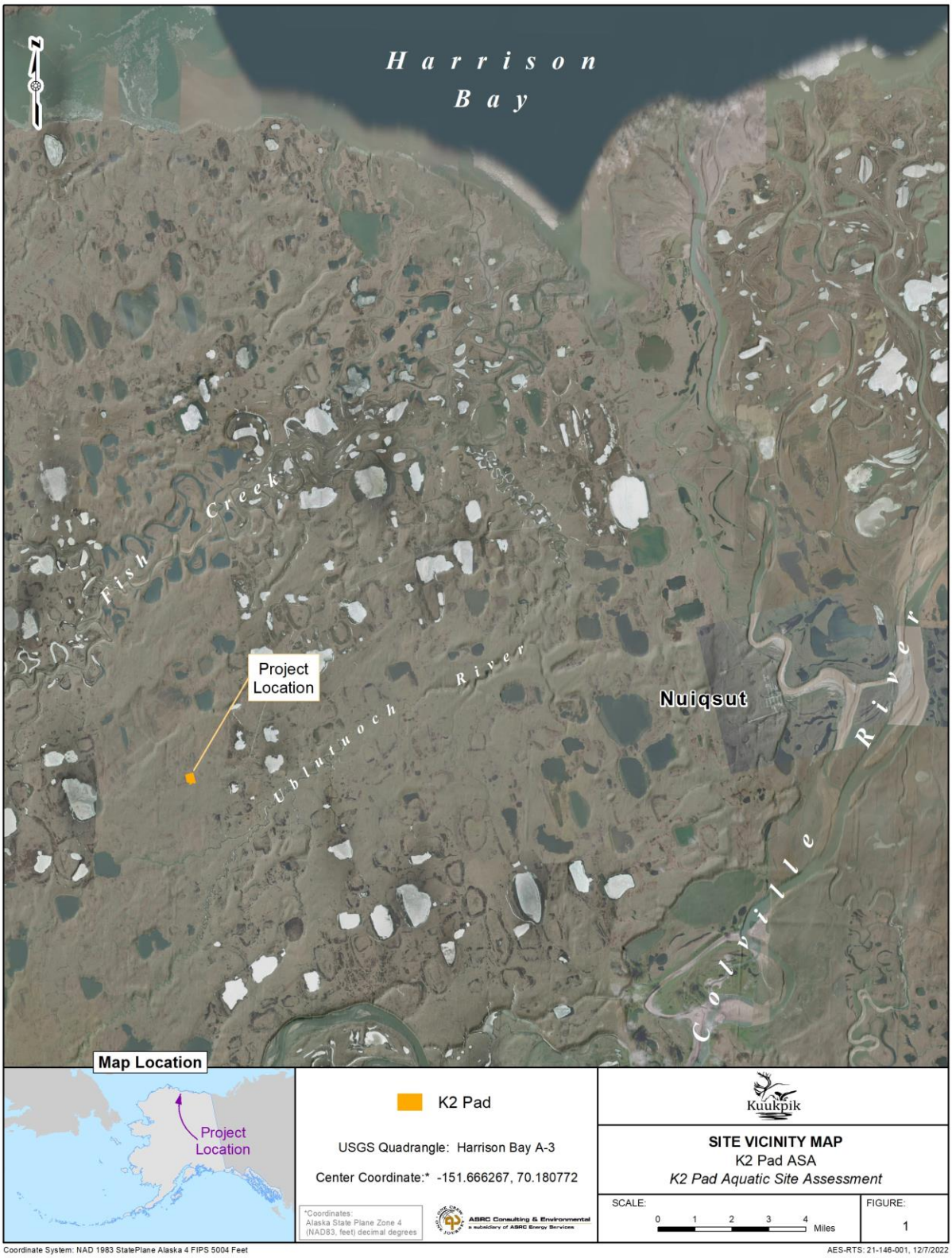


Figure 2 K2 PAD Project Wetlands Overview

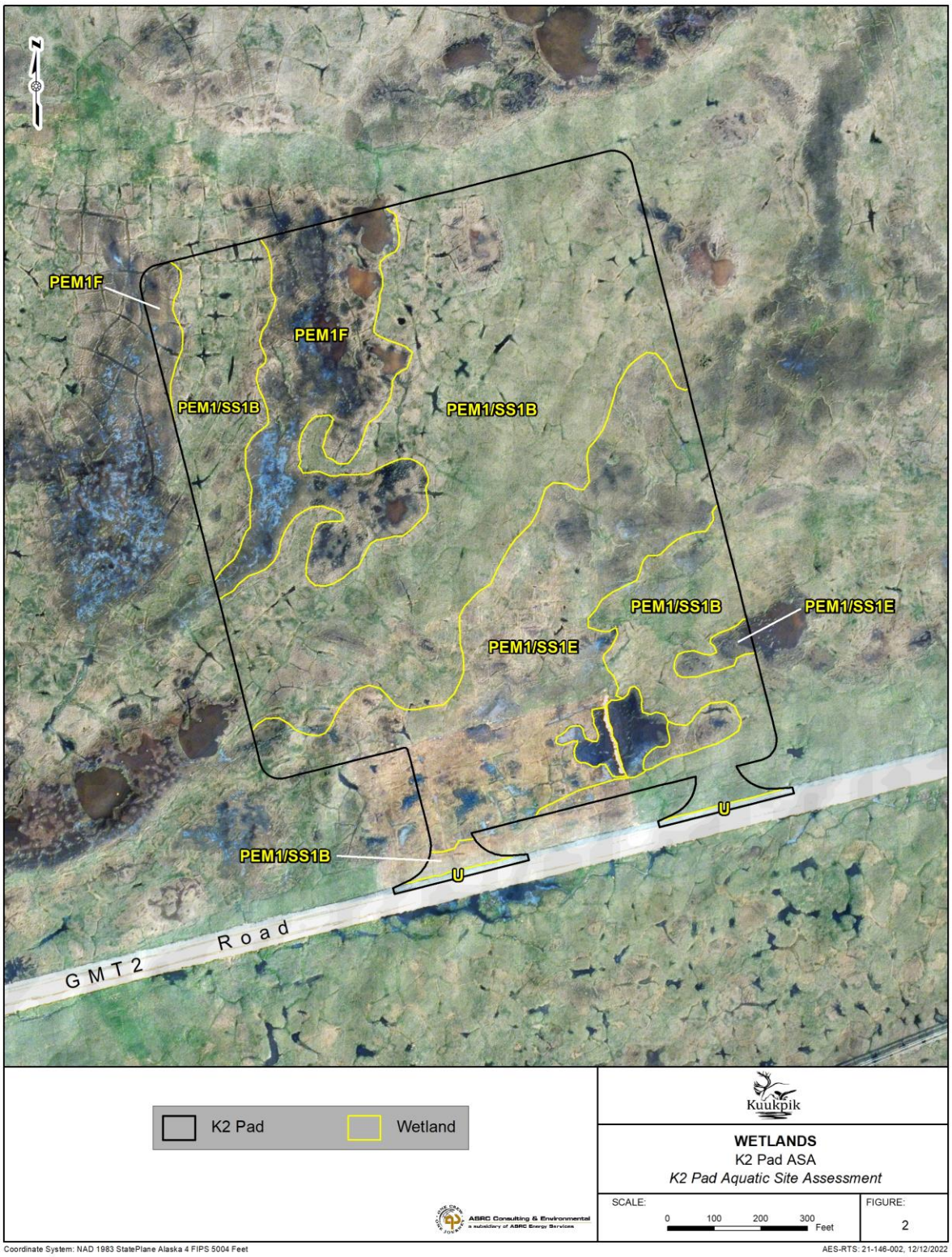


Figure 3 WAA1 80-Meter Plot

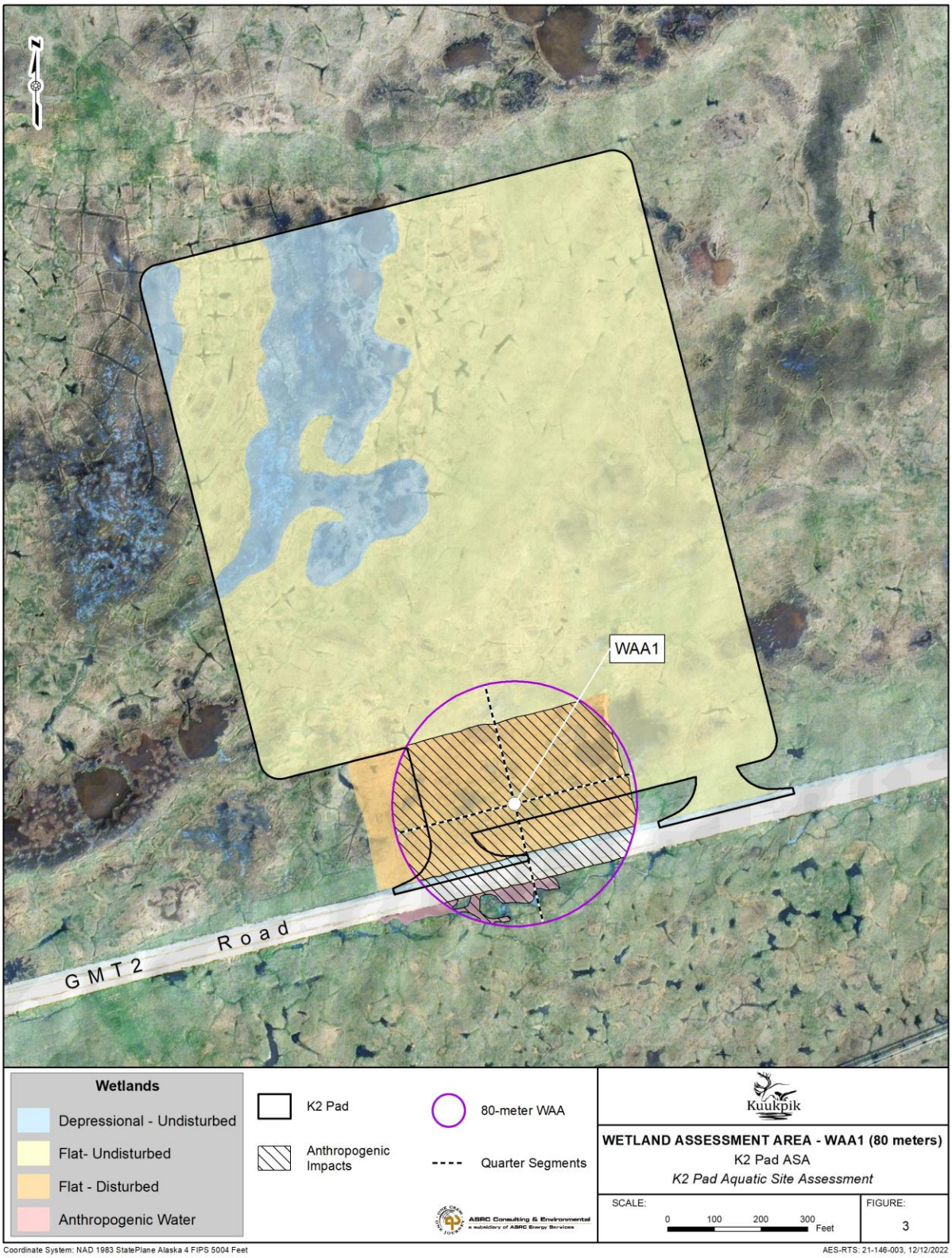


Figure 4 WAA1 800-Meter Plot

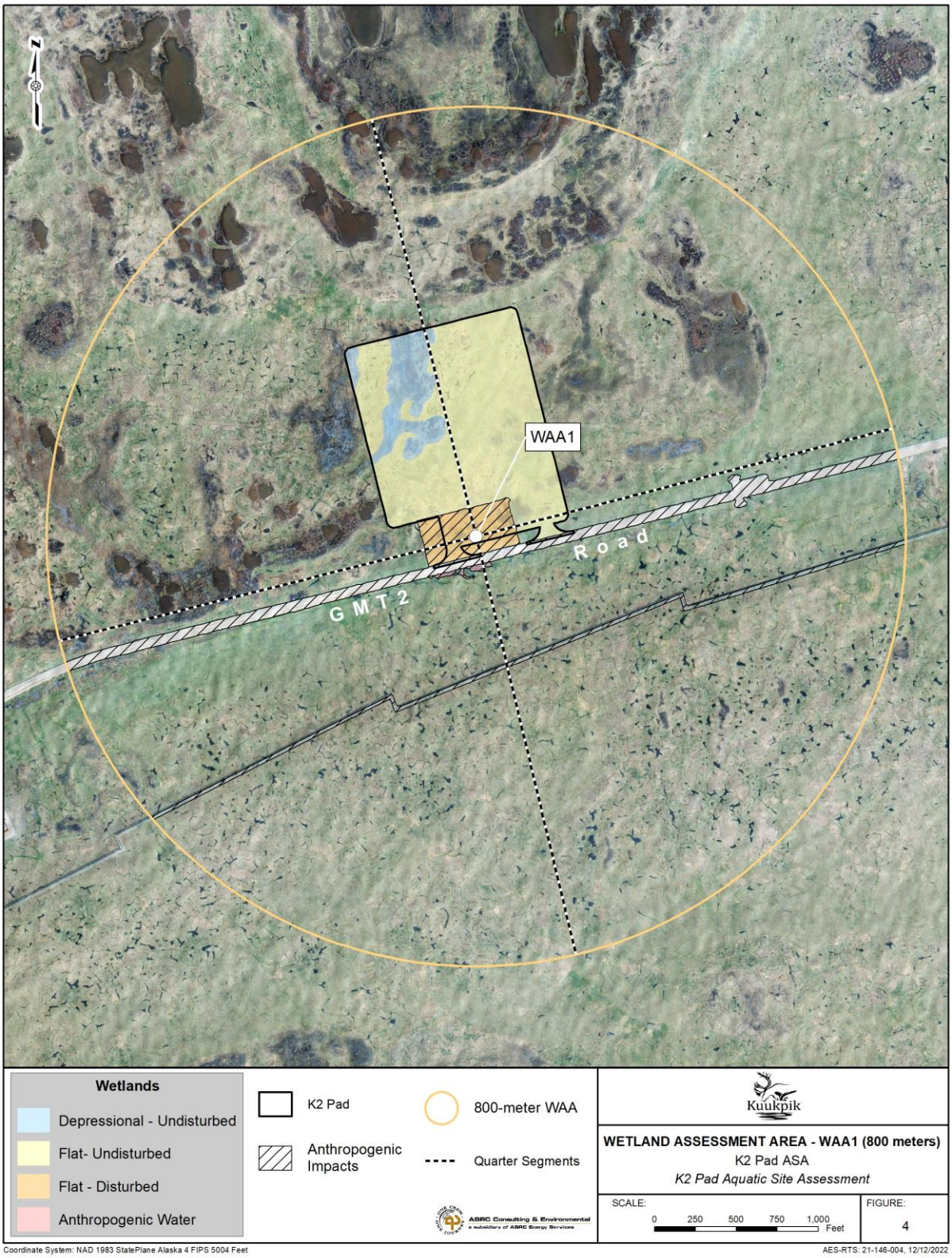


Figure 5 WAA2 80 Meter Plot

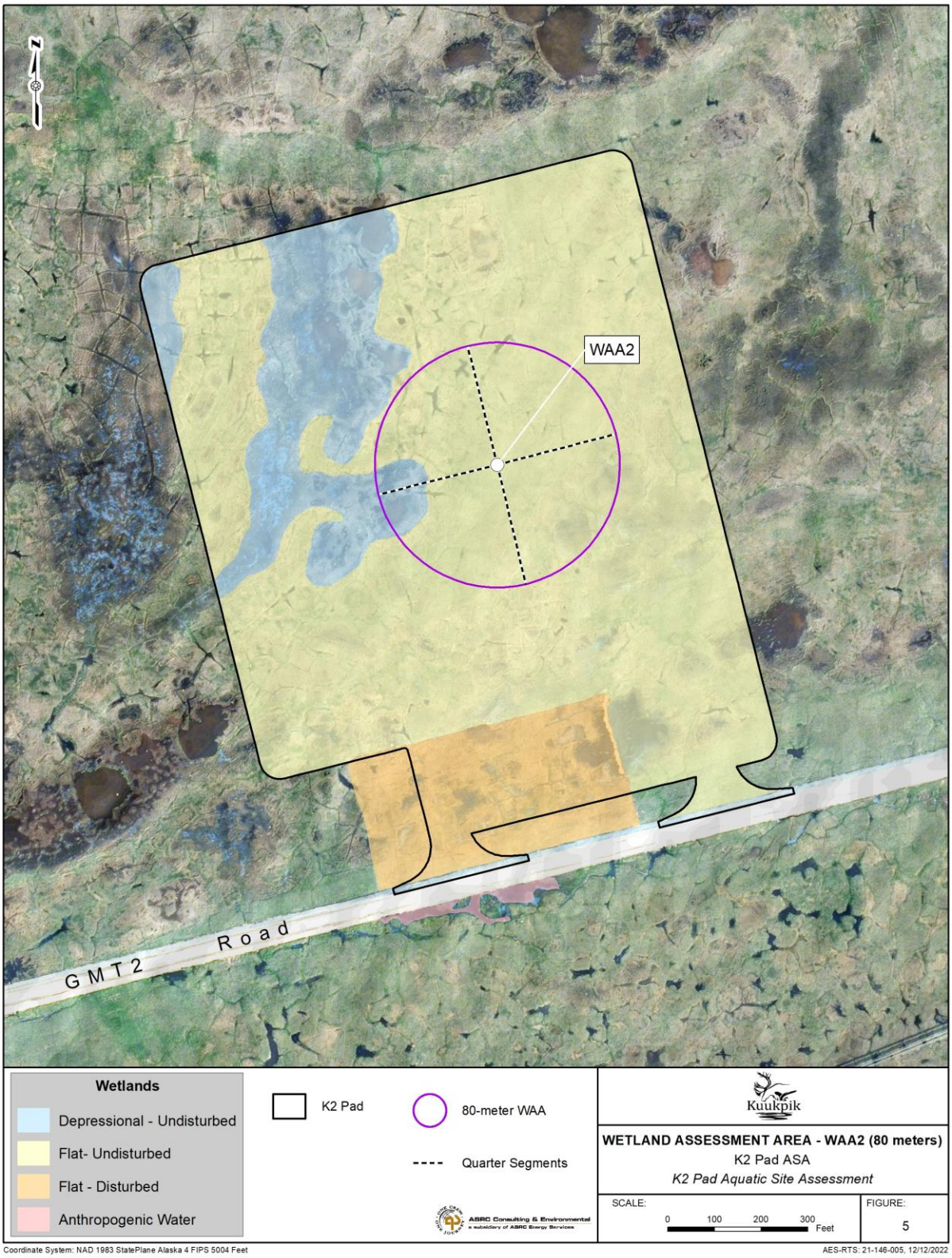


Figure 6 WAA2 800 Meter Plot

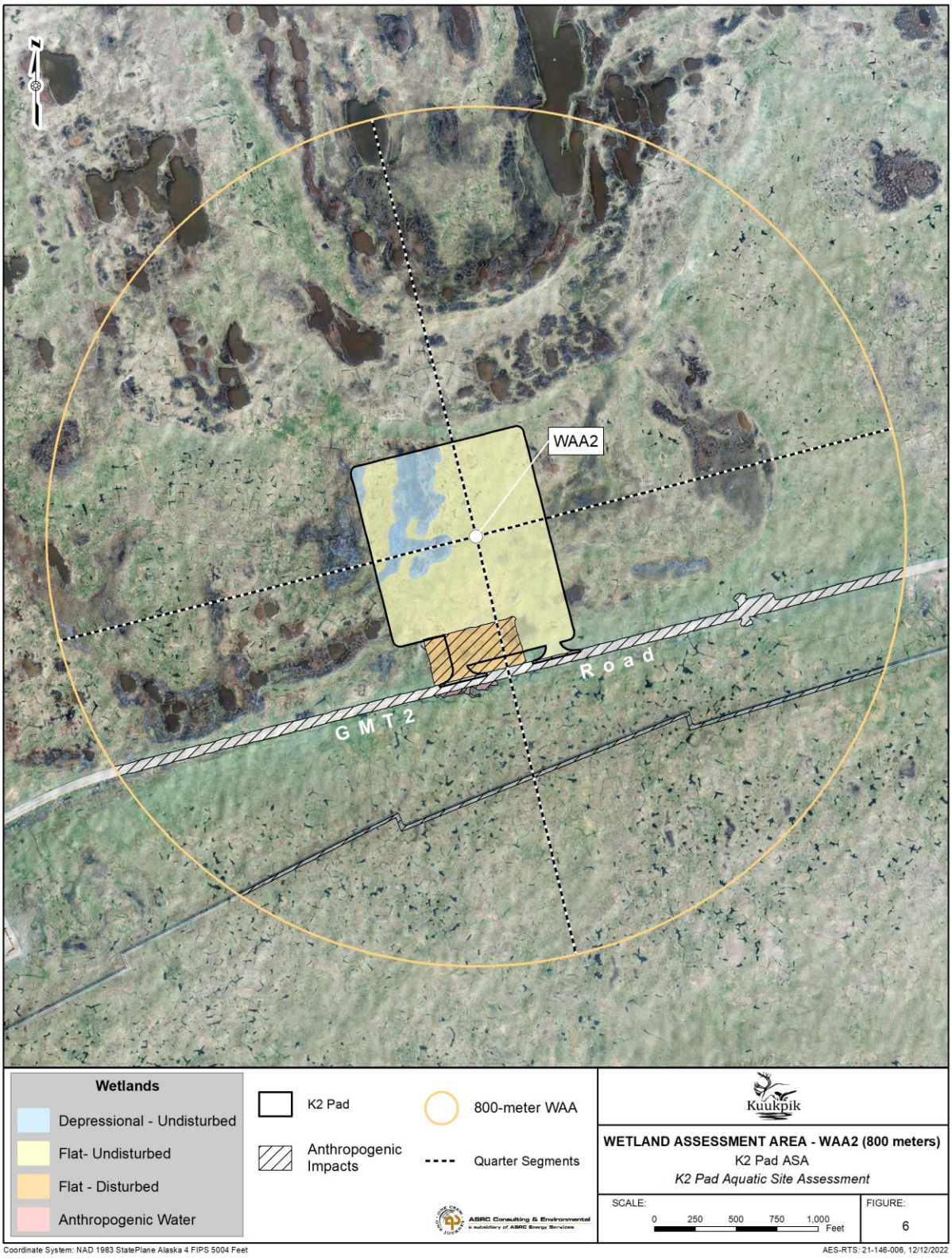


Figure 7 WAA3 80 Meter Plot

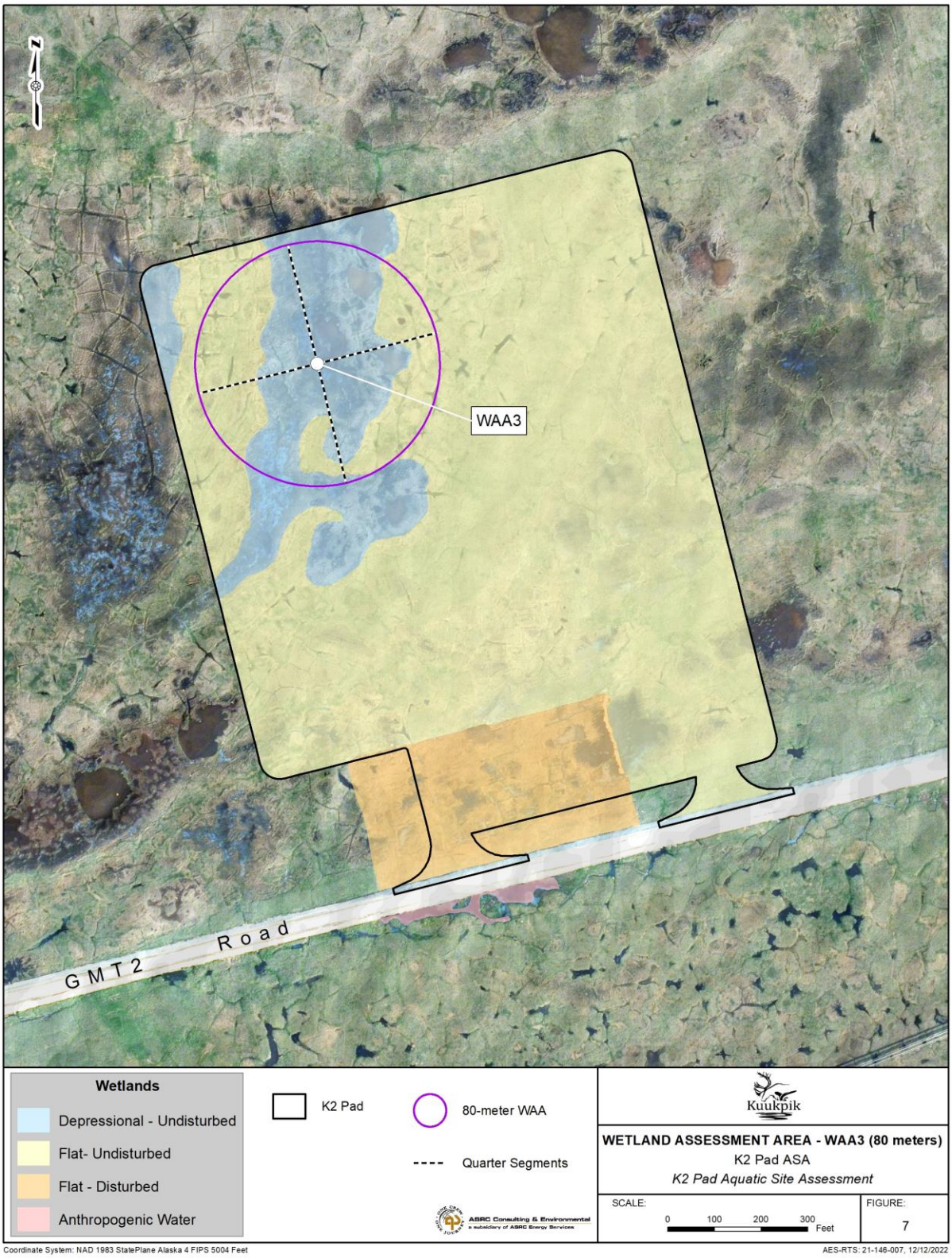
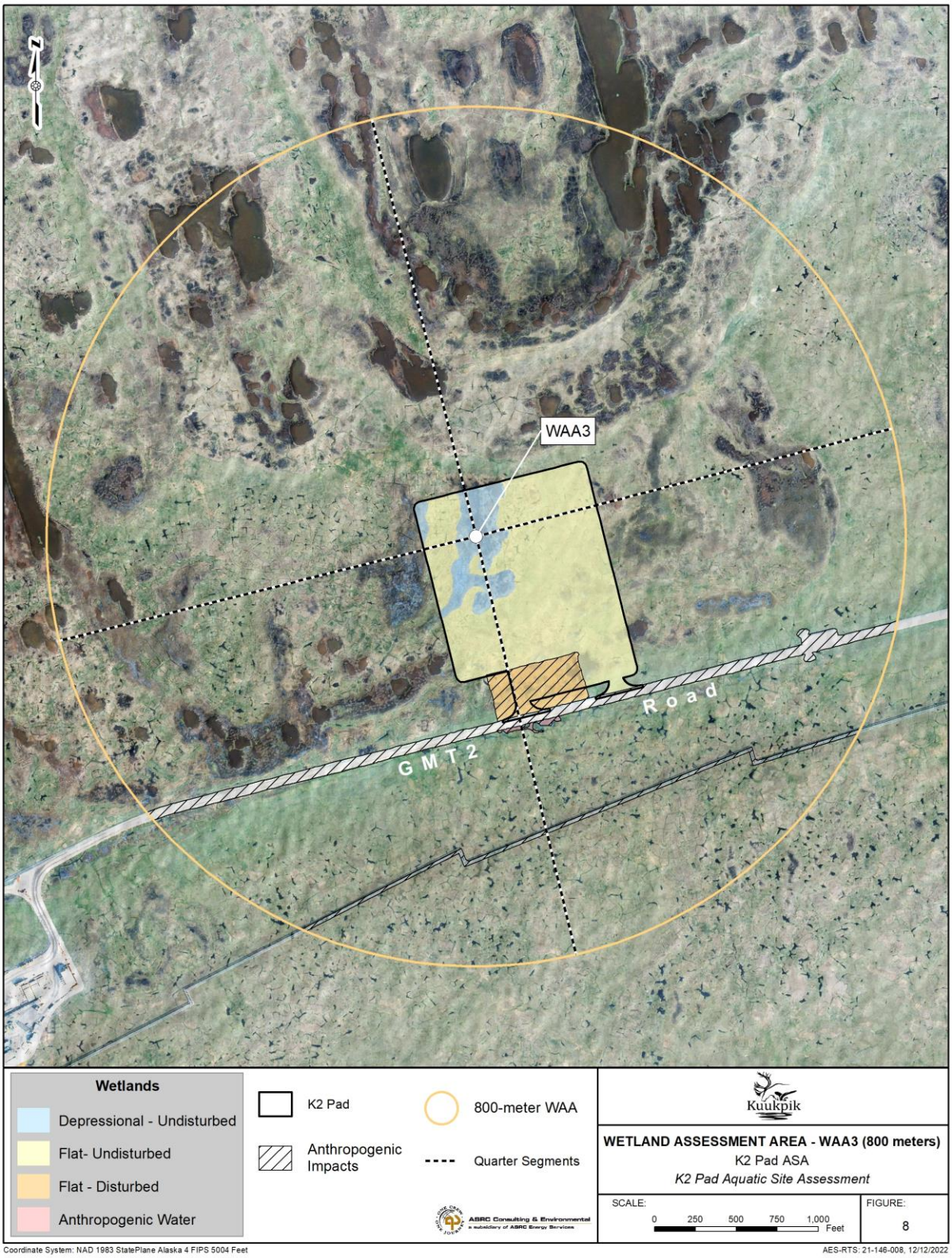


Figure 8 WAA3 800 Meter Plot



APPENDIX A
ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT DESKTOP DATA SHEETS

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT				
Section A: Desk Top (Offsite) Data				
Site Name/Location:	WAA1(D) K2 Pad	Latitude/UTM Northing:	70.17879331	
Date:	12/14/2022	Longitude/UTM Easting:	-151.6658097	
Impact/Mitigation:	Impact	Pre/Post:	Pre-Project	
Region:	Arctic Coastal Plain	Coordinate System:	WGS84	
HGM Class:	Flat	Imagery Source (Year):	CPAI 7/22	
Investigator(s):	J. Christopher			
Determine values for variables 1-5 using an 80 meter radius plot.				
1 V_{LLD}	Local Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			80
	V_{LLD} Subindex Score			***0.00***
2 V_{SW}	Anthropogenically Derived Surface Water - percent of the plot (0 - 100) occupied by surface water derived from human activities, including thermokarst if directly associated, and conspicuously linked.			3
	V_{SW} Subindex Score			***0.81***
3 V_{IH}	Impediment to Hydrology - number of quarter segments (0 - 4) assignable in any direction that have hydrologic impediments.			2
	V_{IH} Subindex Score			***0.50***
4 V_{DD}	Evidence of Dust - accumulation of sediment on vegetation, appearing as areas of discoloration.			No
5 V_{TK}	Evidence of Thermokarst			Yes
Determine values for variables 6-8 using an 800 meter radius plot.				
6 V_{LD}	Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			3
	V_{LD} Subindex Score			***1.00***
7 V_{IW}	Impediment to Wildlife - number of quarter segments (0 - 4) assignable in any direction with impediments to the free movement of wildlife.			2
	V_{IW} Subindex Score			***0.50***
8 V_{DR}	Distance to Roadway - minimum distance in meters (0 - 800) to a roadway of any size, class, or condition.			34
	V_{DR} Subindex Score			***0.07***
		Habitat Assessment Score		***0.28***
		Hydrology Assessment Score		***0.57***
		Biogeochemical Cycling Assessment Score		***0.00***
Remarks				
NDA-Road will be constructed prior to the pad; therefore the road is inlcuded in impact calcs				

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT			
Section C: Summary of Assessment Scores			
On-Site Variable Subindex Scores			
V_{MT}	Microtopography		
V_{SR}	Average species richness		
V_{BG}	Average percent bare ground		
V_{LDD}	Local evidence of dust deposition		
V_{LTK}	Local evidence of thermokarst		
Off-Site Variable Subindex Scores			
V_{LLD}	Local landscape disturbance	0.00	
V_{SW}	Anthropogenically derived surface water	0.81	
V_{IH}	Impediment to hydrology	0.50	
V_{DD}	Evidence of dust	No	
V_{LD}	Landscape disturbance	1.00	
V_{IW}	Impediment to wildlife	0.50	
V_{DR}	Distance to roadway	0.07	
V_{TK}	Evidence of thermokarst	Yes	
Assessment Scores			
	Habitat	***0.28***	
	Hydrology	***0.57***	
	Biogeochemical	***0.00***	
	On-site Modifer		
	AVERAGE SCORE	***0.29***	

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT				
Section A: Desk Top (Offsite) Data				
Site Name/Location:	WAA2 (Ud)K2 Pad		Latitude/UTM Northing:	70.18077202
Date:	12/14/2022		Longitude/UTM Easting:	-151.6662669
Impact/Mitigation:	Impact		Pre/Post:	Pre-Project
Region:	Arctic Coastal Plain		Coordinate System:	WGS 84
HGM Class:	Flat		Imagery Source (Year):	CPAI 7/22
Investigator(s):	J. Christopher			
Determine values for variables 1-5 using an 80 meter radius plot.				
1 V_{LLD}	Local Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			0
	V_{LLD} Subindex Score			***1.00***
2 V_{SW}	Anthropogenically Derived Surface Water - percent of the plot (0 - 100) occupied by surface water derived from human activities, including thermokarst if directly associated, and conspicuously linked.			0
	V_{SW} Subindex Score			***1.00***
3 V_{IH}	Impediment to Hydrology - number of quarter segments (0 - 4) assignable in any direction that have hydrologic impediments.			0
	V_{IH} Subindex Score			***1.00***
4 V_{DD}	Evidence of Dust - accumulation of sediment on vegetation, appearing as areas of discoloration.			No
5 V_{TK}	Evidence of Thermokarst			No
Determine values for variables 6-8 using an 800 meter radius plot.				
6 V_{LD}	Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			3
	V_{LD} Subindex Score			***1.00***
7 V_{IW}	Impediment to Wildlife - number of quarter segments (0 - 4) assignable in any direction with impediments to the free movement of wildlife.			2
	V_{IW} Subindex Score			***0.50***
8 V_{DR}	Distance to Roadway - minimum distance in meters (0 - 800) to a roadway of any size, class, or condition.			250
	V_{DR} Subindex Score			***0.50***
		Habitat Assessment Score		***0.75***
		Hydrology Assessment Score		***1.00***
		Biogeochemical Cycling Assessment Score		***1.00***
Remarks				

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT			
Section C: Summary of Assessment Scores			
On-Site Variable Subindex Scores			
V_{MT}	Microtopography		
V_{SR}	Average species richness		
V_{BG}	Average percent bare ground		
V_{LDD}	Local evidence of dust deposition		
V_{LTK}	Local evidence of thermokarst		
Off-Site Variable Subindex Scores			
V_{LLD}	Local landscape disturbance	1.00	
V_{SW}	Anthropogenically derived surface water	1.00	
V_{IH}	Impediment to hydrology	1.00	
V_{DD}	Evidence of dust	No	
V_{LD}	Landscape disturbance	1.00	
V_{IW}	Impediment to wildlife	0.50	
V_{DR}	Distance to roadway	0.50	
V_{TK}	Evidence of thermokarst	No	
Assessment Scores			
	Habitat	***0.75***	
	Hydrology	***1.00***	
	Biogeochemical	***1.00***	
	On-site Modifer		
	AVERAGE SCORE	***0.92***	

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT				
Section A: Desk Top (Offsite) Data				
Site Name/Location:	WAA3 (Ud) K2 Pad	Latitude/UTM Northing:	70.18133508	
Date:	12/14/2022	Longitude/UTM Easting:	-151.6694158	
Impact/Mitigation:	Impact	Pre/Post:	Pre-Project	
Region:	Arctic Coastal Plain	Coordinate System:	WGS 84	
HGM Class:	Depression	Imagery Source (Year):	CPAI 7/22	
Investigator(s):	J. Christopher			
Determine values for variables 1-5 using an 80 meter radius plot.				
1 V_{LLD}	Local Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			0
	V_{LLD} Subindex Score			***1.00***
2 V_{SW}	Anthropogenically Derived Surface Water - percent of the plot (0 - 100) occupied by surface water derived from human activities, including thermokarst if directly associated, and conspicuously linked.			0
	V_{SW} Subindex Score			***1.00***
3 V_{IH}	Impediment to Hydrology - number of quarter segments (0 - 4) assignable in any direction that have hydrologic impediments.			0
	V_{IH} Subindex Score			***1.00***
4 V_{DD}	Evidence of Dust - accumulation of sediment on vegetation, appearing as areas of discoloration.			No
5 V_{TK}	Evidence of Thermokarst			No
Determine values for variables 6-8 using an 800 meter radius plot.				
6 V_{LD}	Landscape Disturbance - percent of the plot (0 - 100) occupied by anthropogenic disturbance and/or man-made features.			3
	V_{LD} Subindex Score			***1.00***
7 V_{IW}	Impediment to Wildlife - number of quarter segments (0 - 4) assignable in any direction with impediments to the free movement of wildlife.			2
	V_{IW} Subindex Score			***0.50***
8 V_{DR}	Distance to Roadway - minimum distance in meters (0 - 800) to a roadway of any size, class, or condition.			343
	V_{DR} Subindex Score			***0.69***
		Habitat Assessment Score		***0.75***
		Hydrology Assessment Score		***1.00***
		Biogeochemical Cycling Assessment Score		***1.00***
Remarks				

ALASKA NORTH SLOPE REGION RAPID WETLAND ASSESSMENT			
Section C: Summary of Assessment Scores			
On-Site Variable Subindex Scores			
V_{MT}	Microtopography		
V_{SR}	Average species richness		
V_{BG}	Average percent bare ground		
V_{LDD}	Local evidence of dust deposition		
V_{LTK}	Local evidence of thermokarst		
Off-Site Variable Subindex Scores			
V_{LLD}	Local landscape disturbance	1.00	
V_{SW}	Anthropogenically derived surface water	1.00	
V_{IH}	Impediment to hydrology	1.00	
V_{DD}	Evidence of dust	No	
V_{LD}	Landscape disturbance	1.00	
V_{IW}	Impediment to wildlife	0.50	
V_{DR}	Distance to roadway	0.69	
V_{TK}	Evidence of thermokarst	No	
Assessment Scores			
	Habitat	***0.75***	
	Hydrology	***1.00***	
	Biogeochemical	***1.00***	
	On-site Modifer		
	AVERAGE SCORE	***0.92***	