



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

DIVISION OF OIL AND GAS

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January 7, 2016

Ms. Teresa Imm
President
ASRC Exploration LLC
3900 C Street
Suite 1000
Anchorage, AK 99503

RE: LONS 15-006, ASRC Exploration LLC, Unit Plan of Operations Decision, Exploration Phase

Dear Ms. Imm:

I. INTRODUCTION

On October 29, 2015 ASRC Exploration LLC (Applicant) submitted a request to the Division of Oil and Gas (Division) for approval of a Unit Plan of Operations (Plan) to drill the Placer #3 Exploration Well and potentially plug and abandon both Placer #3 and the previously drilled Placer #1 Exploration Well. The Placer #3 Exploration Well is approximately 3 miles east of the Colville River Delta and approximately 15 miles northeast of Nuiqsut. Approval of this Plan, along with approvals from other state and federal agencies (Agencies), is necessary for ASRC Exploration LLC (AEX) to carry out the Placer #3 Exploration Project. Any further exploration is subject to further review and approval by the Department of Natural Resources (DNR).

II. SCOPE OF DECISION

The DNR Commissioner has delegated authority for approval of Unit Plan of Operations activities to the Division under Department Order: 003 in accordance with Alaska Statute (AS) 38.05 and 11 Alaska Administrative Code (AAC) 83.346. As set forth below, the Division has evaluated the proposed Plan to determine if sufficient information as required by 11 AAC 83.346 is provided. The Division has also considered the criteria set forth in 11 AAC 83.303. In approving a Plan, the Division may require amendments that it determines are necessary to protect the State's interests (11 AAC 83.346(e)).

The Plan describes activities to drill one vertical well, Placer #3, during the 2015-2016 season to evaluate subsurface oil bearing zones on a lease held by AEX. Following completion, Placer #3 and the previously drilled Placer #1 well may be plugged and abandoned. The goal of this drilling program is to analyze the potential productivity, deliverability, and commerciality of the greater Placer Unit (PLU) and Placer #3 project area.

The Plan requires the following authorizations from other Agencies:

Agency	Permit Type
AOGCC	Permit to Drill
ADEC	MG1 Air Quality Control Permit
ADEC	Stormwater Discharge Permit
ADEC	ODPCP
ADEC	Temporary Storage of Drilling Waste
ADFG	Fish Habitat Permit
DMLW	Land Use Permit
DMLW	Temporary Water Use Permit
NSB	Land Use Permits
USFWS	LOA for Incidental & Intentional Take

III. LAND STATUS

The PLU is comprised of state lands.

A. Division's Leased Lands: This section refers to Division managed oil and gas leases regardless of ownership of overlying surface lands.

Oil and Gas Lease: 391913

Oil and Gas Mineral Estate Lessee(s): ASRC Exploration LLC

Surface Ownership and Access Agreement: N/A

Special Use Lands: ADL 50666

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Placer #3 Well and Ice Pad	UM, T12N, R7E, S31	70.344752, -150.449844

Oil and Gas Lease: 391027

Oil and Gas Mineral Estate Lessee(s): ASRC Exploration LLC

Surface Ownership and Access Agreement: N/A

Special Use Lands: ADL 50666

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Placer #1 Well and Ice Pad	UM, T12N, R7E, S33	70.346395, -150.395387

IV. PROPOSED OPERATIONS

The Plan describes the proposed operations in full detail. Set forth below is a summary of the key details.

A. Sequence and Schedule of Events

The table below displays AEX’s proposed schedule for the 2015-2016 drilling season. All dates are approximate and may be altered by weather or logistic requirements. The dates will also change because some of them precede this decision. The schedule nonetheless provides the Division with an overall idea of the sequence and schedule of events. The Division reviewed this schedule with the expectation that dates early in the sequence would move back, but that later dates for finishing drilling, demobilization, and clean up would remain the same.

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1	Pre-packing Ice Roads and Pads	12/12/2015	12/31/2015
2	Ice Road and Pad Construction	12/15/2016	1/7/2016
3	Drill Rig Mobilization	1/10/2016	1/24/2016
4	Drilling and Completion of Well	1/24/2016	2/21/2016
5	Drill Rig Demobilization	2/21/2016	3/6/2106
6	Well Testing	3/1/2016	3/24/2016
7	Temporary Suspension	3/24/2016	3/25/2016
8	Demobilization of Well Testing and Camp Equipment	3/26/2016	3/31/2016

B. Well Sites

The Placer #3 well site is planned as a 500-foot square by approximately 6 to 18-inch thick ice pad in Section 31, Township 12 North, Range 7 East in the PLU. Operations will be supported via an ice road. The well will be designed as a nearly vertical well with an approximately 60 foot horizontal displacement from surface to bottom hole. The well is expected to have an approximately 6,900 foot total vertical depth (TVD).

An approximately 150-foot square by 6-inch thick ice pad will be constructed around the previously drilled Placer #1 well site to provide access for equipment to plug and abandon the well. This well was drilled by ConocoPhillips Alaska, Inc. in 2004 and authorized under LO/NS 02-027.

C. Buildings

AEX has entered into an agreement with Brooks Range Petroleum to utilize the facilities already in place at the Mustang Pad for housing, equipment maintenance, and storage. Heated buildings on the drilling and testing location will include offices, break room for operations personnel, two connex containers holding spill contingency plan equipment, the rig mechanic’s shop, and envirovacs.

D. Fuel and Hazardous Substances

Fuel will be trucked to the camp and rig pads by a qualified carrier licensed to transport and dispense fuel. Fuel will be used at the camp pad and the well pads where drilling, completion well testing, and abandonment activities will take place. The drilling locations will have approximately 30,000 gallons of diesel fuel storage tank capacity. No individual fuel storage tank will exceed 9,990 gallons. A diesel fuel tanker truck will be at the rig location to fuel

ancillary equipment such as heaters, light plants, and forklifts. Duck ponds will be placed under pickup trucks, loaders, and all other movable equipment. All bulk fuel storage tanks will be located within secondary containment. The camp pad will have approximately 20,000 gallons of diesel fuel storage capacity and 10,000 gallons of unleaded gasoline storage tank capacity. No individual fuel storage tank will exceed 9,990 gallons. The largest anticipated tank is the 7,500 gallon drilling rig diesel tank, which is therefore anticipated as the largest possible spill volume. Unleaded gasoline will be the primary fuel for transport vehicles. Secondary containment will utilize bermed and impermeable membrane-lined fuel storage areas will be used for all fuel storage tanks and produced liquids. Secondary containment is designed for arctic conditions and will be capable of holding a minimum 110 percent of the maximum fuel storage capacity. Containment discharge practices are outlined in the Spill Prevention, Control, and Countermeasures Plan (SPCC) and include visual and olfactory assessment prior to removal of snow, ice, and water. Any small drips or leaks will be containerized and disposed of at an approved treatment and disposal facility. Produced liquids will be trucked to an operator on the North Slope with an approved facility to accept such liquids. Any drilling and completion fluids used during these operations will be temporarily stored onsite until transported to a Class II designated disposal facility on the North Slope.

E. Solid Waste Sites

Solid waste management will focus on waste minimization, temporary storage, and disposal. All phases will comply with applicable regulations to prevent attracting wildlife, and be designed for the arctic operating environment. All solid waste will be temporarily stored onsite pending shipment from the area. Non-decaying waste will be deposited in “super sacks” at the drill site and will be transported overland to an approved disposal facility. Food and other putrescible waste will be stored in enclosed wildlife-proof containers and managed in accordance with the required visual screening and protocols.

F. Water Supplies

AEX has requested authorization from DMLW to withdrawal ice chips and water from area lakes. The amount of water will be approximately 26 million gallons for ice roads and pads, 425,000 gallons for camp use, and 302,400 gallons for drilling, completions, and well testing. Potable water will be transported to the camp and rig pads by water truck via the gravel and ice road system. Maximum camp size will be approximately 95 people. Camp and rig wastewater will be held in approved tanks designed for the arctic environment until being trucked to an approved wastewater treatment plant on the North Slope. Fresh water is needed for the ice road and pads construction, maintenance, drilling/completion/testing operations, and camp. Snow will be removed from portions of lakes approved for snow removal, water withdrawal, and/or ice mining. Signs will be placed at the access points of permitted lakes. Snow removal will provide access for water trucks and ice chippers, installation of temporary water houses, and truck turnaround areas. Lakes could be flooded to accelerate thickness depending on bathymetry and weather conditions. Snow removal from non-grounded portions of fish-bearing lakes must be approved on an individual basis. Fresh water will be withdrawn from, and ice chips generated from, permitted lakes. Ice chips removed from grounded portions of any permitted lake will be included in the total permitted withdrawal volume. The water will be pumped from lakes and transported by low ground pressure vehicle or rolling stock. Rolling stock will only use trails that have been improved with a firm ice surface to support the weight and pressure of the vehicles. Light plants will be located on access roads and on frozen lakes at the water houses for safety purposes. The light plants will be refueled in compliance with regulations, and any storage of

fuel supplies in tanks for these light plants will have secondary containment with a minimum of 110 percent of the volume of the single largest tank or manifolded tanks.

G. Utilities

On-site power generation and distribution and other utilities are already in place at the Mustang Pad. AEX will utilize the facilities as they are currently configured. Electricity will be generated at the drilling site with portable generators and will power steam boilers and lighting. Communications will be established at the camp and drilling rig to provide for telephone and internet service. Potable water will be hauled by a qualified contractor to the camp facilities and the drilling rig as needed. Waste water will be hauled from the camp facilities at Mustang Pad and from the drilling rig to a permitted wastewater disposal facility on the North Slope.

H. Material Sites

The use of material sites is not planned for this project.

I. Roads

The Placer #3 well location will be accessed via established gravel roads in the Kuparuk River Unit as well as an approximately 9 mile by 35-ft wide ice road to be constructed from the Mustang Pad Access Road near Lake K210 to the drilling location. Ice roads will be constructed to spur from the main road to provide access to lakes permitted for water withdrawal.

The previously drilled Placer #1 well location will be accessed via an approximately 1.3 mile spur ice road beginning approximately 0.5 miles southeast of the Placer #3 ice pad.

J. Airstrips

AEX does not propose to construct airstrips for this project.

K. All Other Facilities and Equipment

Crews involved during ice road and pad building will be housed at the Mustang Pad. Ice roads and pads maintenance equipment will also be staged at the Mustang pad.

L. Rehabilitation Plan

All equipment and structures will be removed from the project area at the end of the season. Ice pads and roads will be scraped to remove any contamination and the resulting waste water will be disposed of at a permitted disposal facility. All trash and debris will be removed and transported for disposal at a permitted disposal facility. AEX will conduct an inspection and stick picking operation via helicopter in Summer 2016 to ensure that DNR cleanup requirements have been met.

Although activities will be conducted from ice roads and pads, impacts to vegetation and habitat may occur. AEX will inspect the project area following snowmelt in 2016 to confirm that tundra damage did not occur. If tundra damage is discovered, AEX will consult with DNR and the NSB to determine the appropriate methods for restoration.

M. Operating Procedures Designed to Minimize Adverse Effects

AEX will ensure that fuel, drilling fluids, and tanks are stored a minimum of 500 feet from waterbodies and stored within secondary containment at least 110% the volume of the single largest tank or manifolded tanks. Drilling fluids and cuttings will be disposed of in permitted

wells. Operations will utilize gravel roads to the greatest possible extent and ice pads and roads will be used elsewhere.

A Cultural Resources survey using data from the State Historic Preservation Office (SHPO) has been completed to ensure that known sites will be avoided. AEX plans to use previously permitted ice road corridors to remain within cleared routes. AEX also consulted with the NSB Inupiat History, Language, and Culture Department which determined that the project will not encounter any sites that are contained in the department's Traditional Land Use Inventory. Additionally, AEX has consulted with residents of Nuiqsut and the NSB Planning Department to avoid impacts to subsistence activities in the project area. AEX also met with representatives of the Kuukpik Corporation, the Native Village of Nuiqsut, and the City of Nuiqsut on August 11 and 12, 2015.

In approving a Plan, DNR may require amendments necessary to protect the State's interest (11 AAC 83.346). AEX addressed the 2008 North Slope mitigation measures in the application process, but it is necessary to amend the Plan to make clear that the Plan incorporates the 2008 North Slope Mitigation Measures. All plan applicants must complete a mitigation measure analysis demonstrating that each mitigation measure is satisfied or inapplicable to its proposed Plan, or that the applicant is seeking an exception. The 2008 North Slope Mitigation Measures allow for the Division to grant an exception if the applicant shows that compliance with the measure is not practicable or that the applicant will undertake an equal or better alternative to satisfy the intent of the mitigation measure. AEX completed the mitigation measure analysis for the 2008 North Slope Areawide and no exception(s) were requested.

The Division has determined that to protect the State's interest, it is necessary to incorporate into the Plan the 2008 North Slope Mitigation Measures as amendments and stipulations to this Plan (11 AAC 83.346(e)).

N. Phased Evaluation

This Plan begins AEX's exploration of the lease described herein. The Plan addresses exploration activities for drilling one well, but based on the results of this exploration, the Division anticipates that AEX may submit additional Plans for additional exploration wells. Thus, in considering the exploration phase, the Division considered both the specific activities proposed under this Plan as well as typical exploration activities that AEX may propose for further exploring the lease.

The Division considered the potential impacts of exploration on public and State interests. In the oil and gas context, the public interest includes maximizing economic and physical recovery of oil and gas resources (AS 38.05.180(a)(1)). The State has an interest in protecting the public interest, and in encouraging assessment of oil and gas resources while minimizing the adverse impacts of exploration, development, production, and transportation activities (AS 38.05.180(a)(2)).

In considering potential impacts, the Division also considered the operating procedures AEX has designed to minimize adverse effects of the Plan activities. These operating procedures include compliance with the mitigation measures associated with each lease. These measures come from the North Slope Areawide Best Interest Finding (BIF) to address potentially negative effects of oil and gas exploration on fish and wildlife species, habitats and their uses, on subsistence uses,

and on local communities. AEX has provided a mitigation measure analysis required as part of their Plan submittal.

i. Facilities impacts on the project area.

All proposed facilities are temporary in nature and will take place on ice pads and roads. AEX has designed, sited, and proposes to operate the exploration drilling facilities in accordance with the North Slope mitigation measures. All activities are proposed to take place on temporary ice pads and roads and are intended to avoid and minimize impacts to tundra and wetlands. No new gravel placement is proposed for AEX's 2015 exploration program. Existing gravel roads will be used to the greatest possible extent and access to the site will be via ice road. Demobilization of the facilities is expected to occur in Spring 2016 in accordance with North Slope mitigation measure A.1.i. All temporary facilities and waste will be removed and the well will be plugged and abandoned or suspended, per AOGCC regulations.

Fuel and hazardous substances potential impacts on the project area

The exploratory drilling proposed under the Plan, as well as other exploratory drilling AEX might propose during the exploration phase, will result in drilling muds, cuttings, and produced water and pose some risk of a spill. Discharges of drilling muds, cuttings, and produced waters; oil spills; and accidental spills of fuel, lubricants, or chemicals can all have impacts to water, wildlife, and habitats during this exploration program. Impacts from exploration activities, from either disposal activities or a spill, could adversely affect water quality, but impacts are expected to be local and temporary because of dilution, settling, and other natural altering and regenerative processes.

Drilling Muds and Produced Water

Byproducts of drilling activities include muds and cuttings, produced water, and associated wastes. Produced water contains naturally occurring substances such as clay, sand, oil, water, and gas. Most drilling wastes are disposed of under ADEC's solid waste disposal program. Re-injection is the preferred method for disposal of drilling fluid. Disposal of drilling muds and cuttings requires permit approval. Most oil field wastes are considered non-hazardous and waste fluids are recycled, filtered, and treated before reinjection or disposal. Cuttings and waste fluids must be made non-hazardous before injection. Produced water is treated using heat, gravity settling, and gas flotation devices to remove hydrocarbons. After treatment, produced water is re-injected into either the oil-bearing formation to maintain pressure and enhance recovery or into an approved disposal well. Cuttings disposal is done through grinding and injecting on-site, or cuttings are transported to an approved disposal site. Wastewater, including sanitary and domestic graywater, is also treated to meet effluent guidelines before discharge.

During exploration drilling, muds and cutting are stored on-site, in holding tanks, or in a temporary reserve pit and then hauled to an approved solid waste disposal site or re-injected into the subsurface at an approved injection well. All production muds and cuttings on the North Slope are re-injected into a Class II injection well. All produced waters are re-injected either into the producing formation or into an injection well. The AOGCC oversees proper and safe handling and disposal of drilling wastes and oversees the underground operation of the Alaska oil industry on private and public lands and waters. The AOGCC administers the UIC Program for oil and gas wells, acts to prevent

waste of oil and gas resources and ensure maximum recovery, and protects subsurface property rights. All disposal wells inject fluids deep beneath any drinking water aquifers. North Slope mitigation measure A.4.j states that the preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. AEX's Plan states that waste drilling muds and cuttings will be hauled to the PBU Grind and Inject Facility for processing and disposal. Solid drilling waste may be placed in open-top metal tanks or shale bins located next to the drilling mud processing units. Waste liquid drilling fluids will be stored in closed tanks. The drilling waste can be pumped out of the tanks/bins and hauled directly offsite for disposal, or temporarily stored onsite in shale bins until frozen prior to disposal. Drilling waste will be transported as it is generated to the extent practicable. After the removal of drilling waste from the storage area, a visual site inspection will be performed to verify that all drilling waste has been removed. A final site inspection report including drilling waste volume and final disposition of waste will be submitted to ADEC as required under 18 AAC 60.430. All drilling waste will be disposed of prior to completion of winter operations. All fluids from production testing will be passed through a test separator system to separate gases and stored in tanks until the testing is completed. After testing, the fluids will either be injected back into the formation from which it was produced, or hauled to North Slope oil and gas production facilities for processing and/or product recovery.

Accidental Spills

Impacts resulting from accidental spills would depend on the type of product, the location, volume, season, and duration of the spill or leak, and the effectiveness of the cleanup response. Heavy equipment, such as trucks, tracked vehicles, and tank trucks, commonly use diesel fuel, gasoline, motor oil, hydraulic fluid, antifreeze, and other lubricants. Spills or leaks could result from accidents, during refueling, or from corrosion of lines. Fuel and hazardous substances must have secondary containment. A secondary containment or surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, and appropriate spill response equipment must be on hand during any transfer or handling of fuel or hazardous substances. AEX's Plan states that fuel will be stored in lined, bermed fuel storage areas or appropriate fuel storage areas that will hold a minimum of 110 percent (110%) of the maximum capacity of fuel storage. Fuel storage, handling, transfers, and spill reporting will be conducted in accordance with the requirements described in AEX's C-Plan (15-CP-5243), North Slope Environmental Field Handbook, and Alaska Safety Handbook. Fuel will be re-supplied to the site either from the existing North Slope oil and gas operations or from the existing operations on the North Slope.

Oil Spills

The effects of an oil spill during the winter are limited due to the short season and temporary nature of the exploration program. There are no production activities, permanent facilities, or pipelines proposed. AEX has proposed temporary activities during winter months, and the Division anticipates any future exploratory drilling would also take place during the winter when the risk from spills is lower.

Mitigation measures include development of oil spill contingency plans, and providing adequate spill response training.

North Slope mitigation measures also require that sites be protected from leaking or dripping fuel and hazardous substances; secondary containment be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends during fuel or hazardous substance transfers; vehicles cannot be refueled within the annual floodplain; containers must be marked with the contents and lessee/contractor name; waste from operations be reduced, reused, or recycled to the maximum extent practicable; muds and cuttings should be disposed of by underground injection, where practicable; and that proper disposal of garbage and putrescible waste be utilized.

AEX's mitigation measure analysis states that fuel and hazardous substances will be stored at least 500 feet from any water body and at least 1,500 feet from any surface drinking water source (A.1.c); drip pans or liners will be placed under parked vehicles or equipment to capture fluids (A.4.c); surface liners will be used under all potential spill points, AEX will verify that adequate sorbents are on hand during fuel transfers, and ensure that personnel are properly trained and understand proper procedures for handling flammable and combustible fluids (A.4.d); all containers with fuel or hazardous substances will be labeled with the contents and lessee's/contractor's name (A.4.f); All wastes generated as part of operations will be hauled offsite for disposal at an approved facility (A.4.h).

ii. Habitat, Fish, Wildlife and Subsistence

Any exploration activity can impact habitat, fish, and wildlife. The North Slope mitigation measures are designed to minimize these impacts. The Plan activities will take place over a limited time period and involve ice roads and pads and temporary siting of facilities. The Division anticipates impacts to habitat, fish, and wildlife will also be limited and temporary. The Division also anticipates that any future Plans for the exploration phase will involve similarly limited and temporary activities and impacts.

Fish

The Miluveach River is an anadromous river, supporting the spawning and overwintering of whitefish and broad whitefish. Migration patterns vary by species and within species by life stage. The Miluveach River also hosts resident Dolly Varden. Potential effects of exploration activities include degradation of stream banks and erosion; reduction of or damage to overwintering areas; impediments to migration; and fish kills due to oil spills. A potential habitat impact at the exploration phase is erosion. Erosion results in siltation and sedimentation, which in turn may result in a reduced or altered stream flow that may affect overwintering habitat availability and the ability of fish to migrate upstream. Protecting the integrity of stream bank vegetation and minimizing erosion are important elements in preserving fish habitat. Streambeds could be affected if stream banks are altered, such as in cases of damage from equipment crossings.

Withdrawal of water from lakes and ponds could affect fish overwintering habitat by entraining juvenile fish, lowering water levels, and increasing disturbance. Removal of water from lakes where fish overwinter may affect the viability of overwintering fish, and longer-term effects of lake drawdown may impede the ability of fish to return to the lake in subsequent years. Removal of snow from lakes may increase the freeze depth of the ice, kill overwintering and resident fish, and adversely affect the ability of fish to utilize the lake in future years.

North Slope mitigation measure A.2.b requires that removal of water from fish-bearing rivers, streams, and natural lakes have prior written approval by DMLW and ADFG. Water intake pipes used to remove water from fish-bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement, with screen mesh size no greater than 1 mm (0.04 inches), unless another size is approved by ADFG. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second, unless an alternative has been approved by ADFG.

The DNR DMLW Water Section has issued authorizations for water withdrawal of approximately 0.3 million gallons for drilling, 0.4 million gallons for camp operations, and 26 million gallons for ice roads and pads to support the AEX exploration drilling program. Before a permit to appropriate water is issued, DMLW considers local demand and may require applicants to conduct aquifer yield studies. Generally, water table declines associated with the upper unconfined aquifer can be best mitigated by industrial users tapping confined (lower) layers or searching for alternate water sources.

Wildlife

Exploration-related disturbance of caribou is expected to have minor impacts on caribou, particularly large groups, with animals being briefly displaced from feeding and resting areas when vehicles pass nearby. Vehicle traffic within the area has the potential to affect habitat use. Acute disturbance effects may in combination result in a cumulative effect on habitat availability for those individuals with fidelity to local calving areas, but may have little or no effect on the Central Arctic Herd population. It is expected these disturbances would be short term.

Moose occur all across the North Slope with the largest concentration along the Colville River and its tributaries. Moose generally remain in the foothills and along river corridors. AEX's proposed drilling program is expected to have little effect on the North Slope moose population.

The temporary displacement of some polar bears from preferred habitats may result from routine exploration activities such as those AEX proposed in the Plan during the exploration phase. Females in dens are at risk for disturbance from any vehicular traffic or drilling noise. Due to its relative proximity to existing oil production infrastructure, the Placer #3 Exploration Drilling Plan is unlikely to significantly increase temporary displacement and disturbance beyond the level caused by existing production activities.

Polar bears continually search for food. Once bears find a camp or industrial site, they will often enter to explore and search for food. If a bear receives a food reward, it is more likely to return. Polar bears often investigate not only things that smell or act like food, but also novel sights or odors. Subadult bears are more likely to be food-stressed and attracted to human activity relative to well-fed bears. Subadults are also less likely to leave if a potential food source is present. Attractants include kitchen odors, deliberate feeding, accessible garbage, sewage lagoons, carcasses, industrial materials, and alteration of habitat.

Brown bears can be found throughout the Arctic region in varying densities. The lowest densities occur along the coastal plain; brown bears are at the northern limits of their range in the Arctic. The availability of food is limited and their reproductive potential is low. Brown bears may be subject to disturbance from oil and gas activity. During exploration, human activity may attract foraging bears, especially to refuse disposal areas. Omnivores are attracted to food and food odors associated with human activity, and may become conditioned to non-natural food sources. This may pose a threat to human safety. Bears can also be displaced by human land use activities.

There are several regulations imposed by state, federal, and local agencies that are implemented to avoid, minimize, and mitigate these potential effects to bears. In addition to complying with the Endangered Species Act and the Marine Mammal Protection Act, AEX must comply with mitigation measures to minimize effects of exploration activities on bears.

Subsistence

Traditional subsistence uses in the area include: brown bear, caribou, musk ox, and moose harvesting; hunting and trapping of furbearers, such as wolf, fox, weasel, wolverine, and squirrel; hunting migratory waterfowl and collecting their eggs; fishing for whitefish, char, salmon, smelt, grayling, trout, and burbot; collecting berries, edible plants, and wood.

Potential exploration activities that could have effects on subsistence uses in the area include discharges from well drilling, and ongoing disturbances from operation activities such as vehicle traffic and drilling noise. Noise, traffic disturbance, and oil spills generally produce short-term impacts on subsistence species.

The North Slope Areawide Best Interest Finding contains several mitigation measures intended to reduce conflicts with subsistence, commercial, and sport harvest activities. Prior to submitting a Plan to the Division, the lessee must consult with affected subsistence communities and the NSB to discuss reasonably foreseeable effects on subsistence during the proposed operations, and methods of proposed operations and safeguards or mitigation measures that can be implemented to prevent unreasonable conflicts. The lessee must make reasonable efforts to assure that the proposed exploration activities are compatible with subsistence hunting and fishing, and will not result in unreasonable interference with subsistence harvests. The Division may implement restrictions, as appropriate, to reduce potential conflicts.

AEX's mitigation measure analysis states that AEX understands the subsistence interests of local residents. AEX met with representatives from the NSB, Kuukpik Corporation, the Native Village of Nuiqsut, and the City of Nuiqsut to discuss measures to reduce subsistence impacts. AEX will need to comply with the mitigation measures throughout the exploration phase, and the Division anticipates that any future plans of operations for exploration will include similar measures to address subsistence concerns.

iii. Historic or Archeological sites

While exploring, AEX could encounter prehistoric, historic, or archaeological sites.

AS 41.35.200 addresses unlawful acts concerning cultural and historical resources. In addition, all field-based response workers are required to adhere to historic properties protection policies that reinforce that it is unlawful to collect or disturb, remove, or destroy any historic property or suspected historic property and to immediately report any historic property that they see or encounter.

Under North Slope Borough municipal code (NSBMC), proposed exploration shall not impact any historic, prehistoric, or archaeological resource before the assessment of that resource by a professional archaeologist (NSBMC 19.50.030(F)). NSBMC 19.70.050(F) gives the NSB authority to protect cultural and historic resources and current subsistence uses of these sites.

In addition, North Slope mitigation measures require the lessee to conduct an inventory of prehistoric, historic, and archaeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the NSB, nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity. A cultural resources survey and inventory was conducted in the project area to identify any prehistoric, historic, or archaeological sites. AEX has obtained cultural clearance from the State of Alaska, State Historic Preservation Office North Slope Borough cultural resources department on potential historical, and archaeological resources.

V. CONSIDERATION OF UNIT PLAN OF OPERATIONS REQUIREMENTS UNDER 11 AAC 83.346(c-d) and 11 AAC 83.390

A. Full Payment of Damages to the Surface Owner 11 AAC 83.346(c)

The State owns the surface and full payment of damages to the State are accomplished through the bond posted by the applicant discussed in subsection C below.

B. Plan Sufficiency 11 AAC 83.346(d)

A proposed plan must include statements, maps, or drawings setting forth

- (1) the sequence and schedule of operations;
- (2) the projected use requirements directly associated with the proposed operations;
- (3) plans for rehabilitation;
- (4) a description of operating procedures to prevent or minimize adverse effects on natural resources and concurrent uses of the area (11 AAC 83.346(d)).

The information in section IV. Proposed Operations, above, and additional information contained in AEX's proposed Plan satisfy the requirements for a plan under 11 AAC 83.346(d) and thus provide the Division with sufficient information available at this time to determine the surface use requirements and impacts directly associated with the proposed operations.

C. Oil and Gas Lease Bond 11 AAC 83.390

The State owns all the surface land the proposed Plan will be located on. The State owns all the mineral estate the proposed Plan will be producing from. For the State, a lessee provides for payment of damages by posting a bond, and remains liable for full damages under the lease. AEX has provided a Statewide Oil and Gas Bond in the amount of \$500,000.

VI. CONSIDERATION OF 11 AAC 83.303 CRITERIA

A. Protection of Public Interest

The Division has considered the public interest including statutory provisions that provide for conserving natural resources through unitization (11 AAC 83.303(a); AS 38.05.180(p)). The legislature has declared the public's interest in oil and gas development as an interest in developing oil and gas resources to maximize economic and physical recovery, maximize competition, and maximize use of Alaska's human resources (AS 38.05.180(a)(1)).

The proposed Plan provides for use of Alaska's human resources by pledging to provide local employment and contracting opportunities and to encourage its contractors to do the same (Proposed Plan Mitigation Measure Analysis A(7)(a)).

B. Conservation of Natural Resources

The Division has considered whether the Plan promotes conservation of all natural resources, including all or part of an oil or gas Plan, field, or area (11 AAC 83.303(a)(1)). Conservation, in this context, means maximizing the efficient recovery of oil and gas and minimizing the adverse impacts on the surface and other resources (11 AAC 83.395(1)). Exploration within a unit is intended to provide more efficient exploration than on the individual leases that make up the unit, and this Plan considers the exploration of the Unit, not single leases. Efficient exploration creates less impact on the land and promotes maximum use of all natural resources in the area, consistent with the public interest.

There are a number of ways in which the Plan seeks to minimize adverse impacts on natural resources. This Plan incorporates the mitigation measures set forth in the North Slope Areawide Oil and Gas Lease Sale Final Finding (North Slope Mitigation Measures). These mitigation measures include measures to protect habitat, fish, and wildlife, protect subsistence resources, and limit the impact from fuel and hazardous substances (North Slope Areawide Final Finding at sections 9-3 – 9-5). The Plan also includes operating procedures to prevent or minimize adverse effects, including effects on the environment, wildlife, and subsistence resources discussed in section IV.M of this decision.

C. Prevention of Economic and Physical Waste

The Division has considered whether the Plan promotes the prevention of economic and physical waste (11 AAC 83.303(a)(2)). Issues of economic and physical waste are carefully considered during Unitization and annually thereafter in the POE; this Plan conforms to the current PLU POE on file with the Division's Units Section.

D. Protection of All Parties of Interest, Including the State

The Division has considered whether the Plan provides for the protection of all parties of interest, including the State (11 AAC 83.303(a)(3)). The parties of interest to a unit plan are the unit operator and working interest owners. The State has an economic interest in the oil and gas resources because it receives royalties from production. It is further in the State's best interest to

encourage assessment of oil and gas resources, recognize the costs of exploring in varied geographic regions, and minimize the adverse impact of exploration, development, production, and transportation activity (AS 38.05.180(a)(2)).

Without approval of a Plan, AEX cannot explore the PLU, and the State cannot promote wise development from that exploration data. The Plan thus protects the Unit Operators, working interest owners' and the State's interests in exploring the resources.

E. Environmental Costs and Benefits

The Division has considered the environmental costs and benefits of unitized exploration outlined in this Plan and through the POE, and annual updates, on file with the Units Section (11 AAC 83.303(b)(1)); this Plan conforms to the current POE on file with the Division.

The North Slope Mitigation Measures, incorporated into this Plan by amendment, include measures to protect habitat, fish, and wildlife (North Slope Areawide Final Finding at sections 9-3 – 9-5). Additional operating procedures designed to minimize adverse effects on other natural resources and other uses of the unit area and adjacent areas are discussed in section IV.M of this decision.

F. Geological and Engineering Characteristics of Hydrocarbons

DNR previously considered the geological and engineering characteristics of a potential hydrocarbon accumulation or reservoir when it approved the unit agreement (11 AAC 83.303(b)(2)); this Plan conforms to the current POE on file with the Division's Units Section.

G. Prior Exploration Activities

The Division has considered prior exploration activities in the Plan area pursuant to 11 AAC 83.303(b)(3). Exploration drilling in the Placer #3 project area has been limited. In 2004, ConocoPhillips Alaska, Inc. drilled the Placer #1 and Placer #2 exploration wells approximately 1.3 miles east of the Placer #3 project area.

H. Plan of Exploration

The Division has considered the plans for exploration set forth in and approved by DNR in the POE (11 AAC 83.303(b)(4)). The current POE approved on January 30, 2015 requires AEX to carry out operations in the proposed Plan.

I. Economic Costs and Benefits to the State

The Division has considered the economic costs and benefits to the State (11 AAC 83.303(b)(5)). Without approval of a plan, AEX will be unable to proceed with developing the PLU, which will cost the State the economic benefit of the royalties, as well as other economic benefits that flow from future production.

J. Other Relevant Factors to Protect the Public Interest

The Division has considered other relevant factors necessary or advisable to protect the public interest (11 AAC 83.303(b)(6)). These other factors consist of the mitigation measures (section IV.M of this document) that will apply to this Plan; and the necessity to obtain other permits and approvals by different Agencies and landowners.

VII. CONSULTATION WITH OTHER GOVERNMENT ENTITIES

In reviewing the proposed Plan, the Division considered the fact that AEX may require approvals from Agencies for other elements of its project. Although mentioned in the Plan and above, these aspects of the project are not operations being approved by this decision and the Division offers no opinion on whether an agency should or should not approve these activities.

In addition to considering the approvals required by Agencies, as they relate to this decision, the Division provided an Agency review and comment opportunity for the activities considered for authorization under this decision. The following government entities were notified on October 29, 2015 for comment on the Plan: U.S. Army Corps of Engineers; NSB; ADFG; ADEC; and DNR: DMLW, Office of History and Archaeology (OHA), Office of Project Management and Permitting (OPMP), and the Division of Oil and Gas. The comment deadline was 4:30 pm Alaska time on November 12, 2015. Comments were received and the Division, Applicant, and commenting agency(ies) reconciled the comments without modifying the Plan ; Agency comment(s) and Applicant's response(s) are summarized in Appendix B. The Plan was then publicly noticed.

VIII. PUBLIC NOTICE

Public notice of the Plan and opportunity to comment, per AS 38.05.035(e)(1)(c)(ii) was published in the Alaska Dispatch News and the Arctic Sounder on November 16, 2015 with a deadline for comments of December 15, 2015 at 4:30 pm Alaska time. Additionally, a copy of the notice was posted on DNR's web site. No public comments were received by the Division.

IX. CONDITIONS OF APPROVAL

Having considered the proposed project, the Division approves the Plan as amended and modified by this decision and subject to the below conditions of approval:

To protect the State's interest, the Division finds that it is necessary to amend the Plan to incorporate the following Conditions of Approval:

1. The applicant shall defend, indemnify and hold the State of Alaska harmless from and against any and all claims, damages, suits, losses, liabilities and expenses for injury to or death of persons and damage to or loss of property arising out of or in connection with the entry on and use of State lands authorized under this approval by the applicant, its contractors, subcontractors and their employees.
2. The applicant shall inform and ensure compliance with any and all conditions of this approval by its employees, agents and contractors, including subcontractors at any level.
3. Unless pre-authorized by a general permit, amendments and modifications to this approval require advance notice and must be approved in writing by the DNR.
4. The Commissioner of the DNR may require that an authorized representative be on-site during any operations conducted under this approval. This stipulation is required to ensure that the Divisions of Oil and Gas and Mining, Land and Water meet their statutory responsibilities for monitoring activities taking place on State-owned lands.
5. A status report for the activities conducted under this approval must be filed with this office on May 1 and November 1 each year, from the date this approval is issued and until a final completion report is filed with the Division. If a lessee requests an

assignment, a status report must also be submitted during the assignment process. Failure to file in a timely manner may result in revocation of this approval.

- a. Each status report shall include a statement describing and map(s) depicting all operations actually conducted on the leased area as of the date the report is prepared, which includes the location, design and completion status of well sites, material sites, water supplies, solid waste sites, buildings, roads, utilities, airstrips, and all other facilities and equipment installed.
 - b. Upon completion of operations, the applicant will submit a completion report which will include all information required of a status report described in (a) above as well as a statement indicating the date of operations completion, any noncompliance with the terms of this plan approval of which a reasonable lessee would have knowledge of, clean-up activities conducted, the method of debris disposal, and a narrative description of known incidents of surface damage.
6. Notification. The applicant shall notify the DNR of all spills that must be reported under 18 AAC 75.300 under timelines of 18 AAC 75.300. All fires and explosions must be reported to DNR immediately. The DNR 24 hour spill report number is (907) 451-2678; the fax number is (907) 451-2751. The Department of Environmental Conservation (DEC) oil spill report number is (800) 478-9300. DNR and DEC shall be supplied with all follow-up incident reports.
 7. A certified As-Built survey of the improvement shall be provided within one year of placement of the improvement. This As-Built must be submitted in both electronic and physical format.

To protect the State's interest, the Division finds that it is necessary to amend the Plan to incorporate the following Project Specific Stipulations: N/A.

X. FINDINGS AND DECISION

Submission of this Plan initiates the Division's review for the beginning of the exploration phase. Having considered the specific activities proposed, the best interest finding and associated supplements for the lease sale area within which the project is located, the collective oil and gas activities for the North Slope Areawide lease sale area outlined in the 2014 Division of Oil and Gas Annual Report and the foregoing discussion of issues and conditions of approval, the Division makes the following findings:

1. The Plan provides sufficient information, based on reasonably available data, for the Division to determine the surface use requirements and impacts directly associated with the proposed operations.
2. The Plan includes statements, maps, or drawings setting forth the sequence and schedule of operations, projected use requirements, description of operating procedures, and a plan of rehabilitation designed to prevent or minimize adverse effects.
3. To protect the State's interest and mitigate potential adverse social and environmental effects associated with the Plan, the Division finds it necessary to amend the Plan to incorporate the mitigation measures set forth in the North Slope Areawide Oil and Gas Lease Sale Final Finding.
4. All oil and gas activities conducted under oil and gas leases are subject to numerous local, state and federal laws and regulations with which AEX is expected to comply.

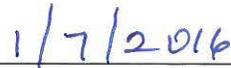
5. The people of Alaska have an interest in developing the state's oil and gas resources and maximizing the economic and physical recovery of those resources. AS 38.05.180(a).
6. Alaska's economy depends heavily on revenues related to oil and gas production and government spending resulting from those revenues. The related revenue sources include bonus payments, rentals, royalties, production taxes, income taxes, and oil and gas property taxes.
7. The potential benefits of approving this Plan outweigh the possible adverse effects, which have been minimized through implementation of mitigation measures, conditions of approval, and project specific stipulations, and thus approval of this Plan is in the State's best interest.

Based upon the Plan, supporting information provided by the applicant and the Division's review, determination of applicable statutes and regulations, consultation with other agencies, relevant entities and individuals, public comment, and the above findings related to that Plan, the Division hereby approves the Plan.

Sincerely,



Kim Kruse
Permitting Section Manager
Division of Oil and Gas



Date

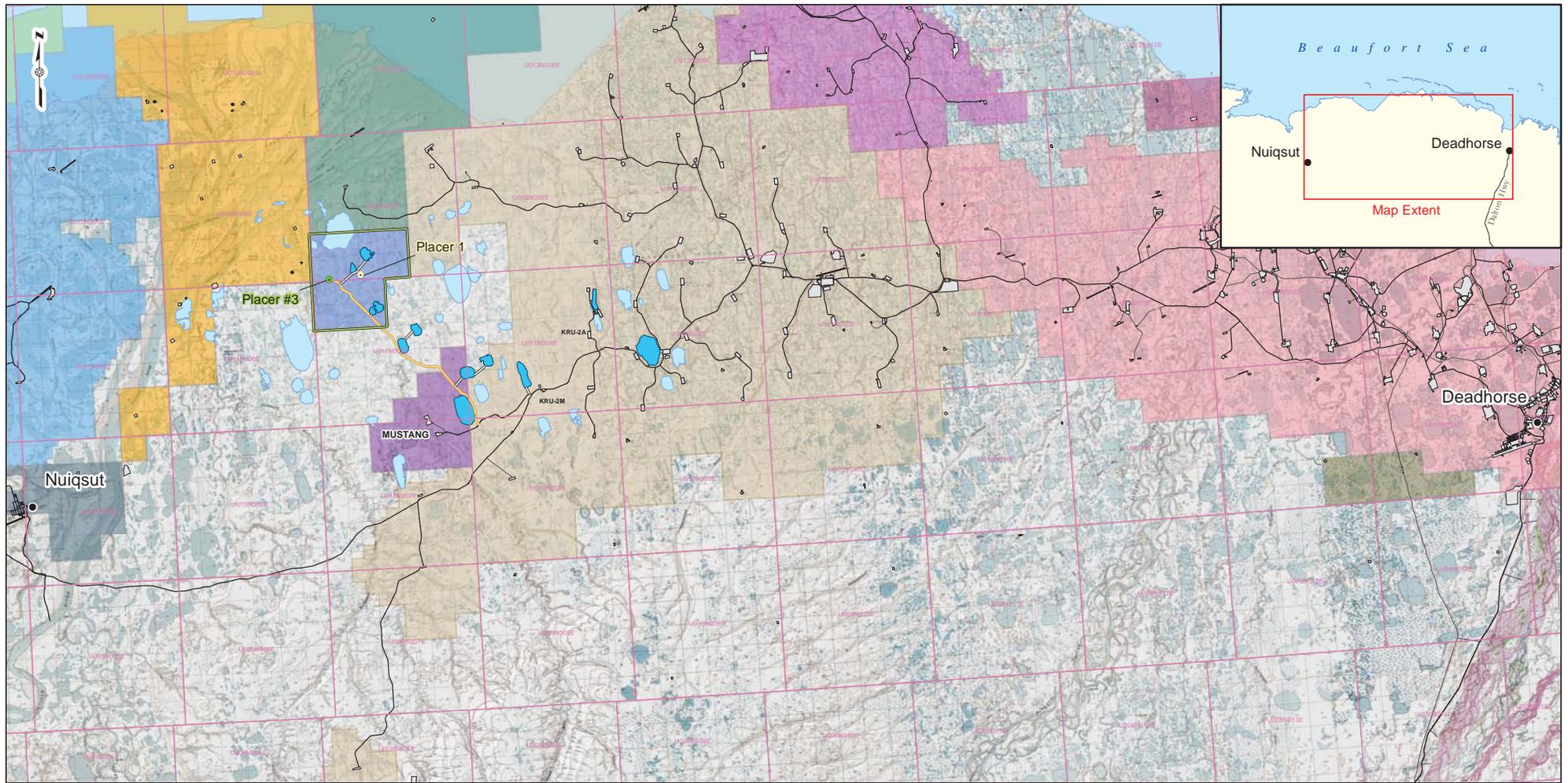
Appeal

An eligible person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of issuance of this decision, as defined in 11 AAC 02.040(c) and (d), and may be mailed or delivered to the Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918; or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

Attachments:

- Appendix A: Maps and Figures
- Appendix B: Agency and Public Comments

ecc: DOG: Marta Mueller, Allen Eddy, Kim Kruse, Nathaniel Emery, Paul Blanche, Temple Davidson, Jeanne Frazier, Jodi Delgado-Plikat, Kyle Smith
DMLW: Alexander Wait, Jeanne Proulx, Melissa Head, Matthew Willison, Kimberley Maher, Henry Brooks
ADFG: Jack Winters, Marla Carter
ADEC: Sharon Morgan, Fathima Siddeek, Gerry Brown
OPMP: N/A
Borough: Thomas Brower III, John Adams, Gordon Brower, Bart Ahsogeak, Rhoda Ahmaogak
Other: USACOE



- | | | | | | |
|---|--|--|---|--|--|
| <ul style="list-style-type: none"> ● Placer #1 ● Placer #3 Placer Unit Boundary | <ul style="list-style-type: none"> AEX Proposed Ice Road Lake Access Ice Road Primary Road Secondary Road | <ul style="list-style-type: none"> Alternative Water Source Potential AEX Water Source Facility MTRS | <p><u>Unit</u></p> <ul style="list-style-type: none"> Arctic Fortitude Beechey Point Colville River Dewline Kuparuk River | <ul style="list-style-type: none"> Milne Point Nikaitchuq Northstar Oooguruk Pikka | <ul style="list-style-type: none"> Placer Prudhoe Bay Qugruk Southern Miluveach Tofkat |
|---|--|--|---|--|--|

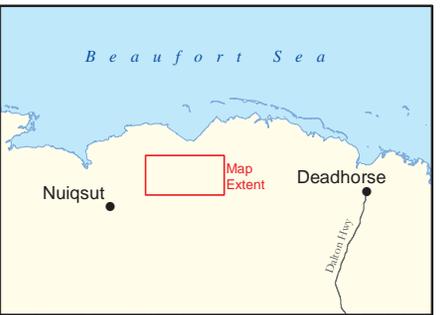
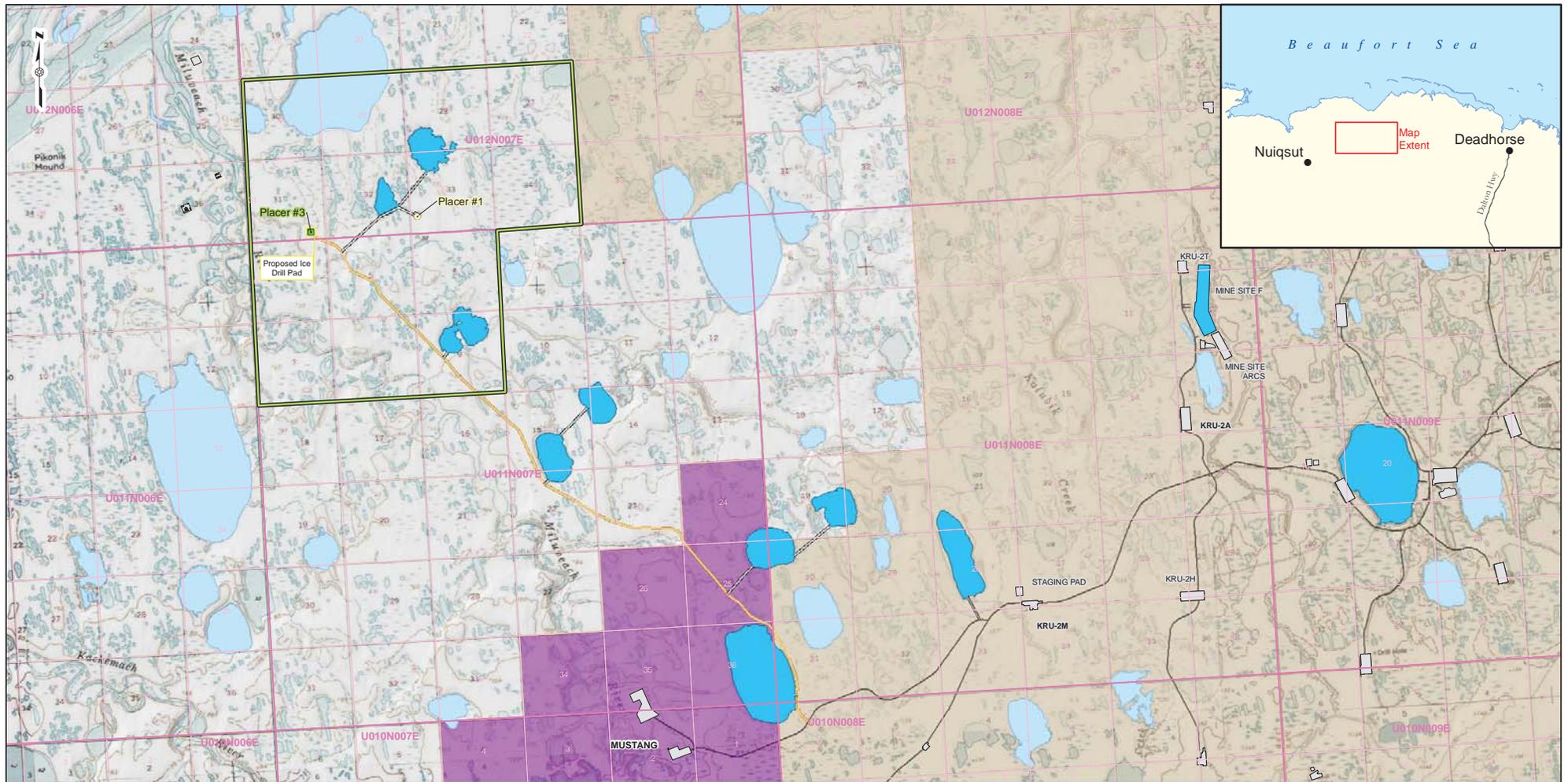
ASRC EXPLORATION LLC

Appendix A
Maps and Figures



FIGURE: 1



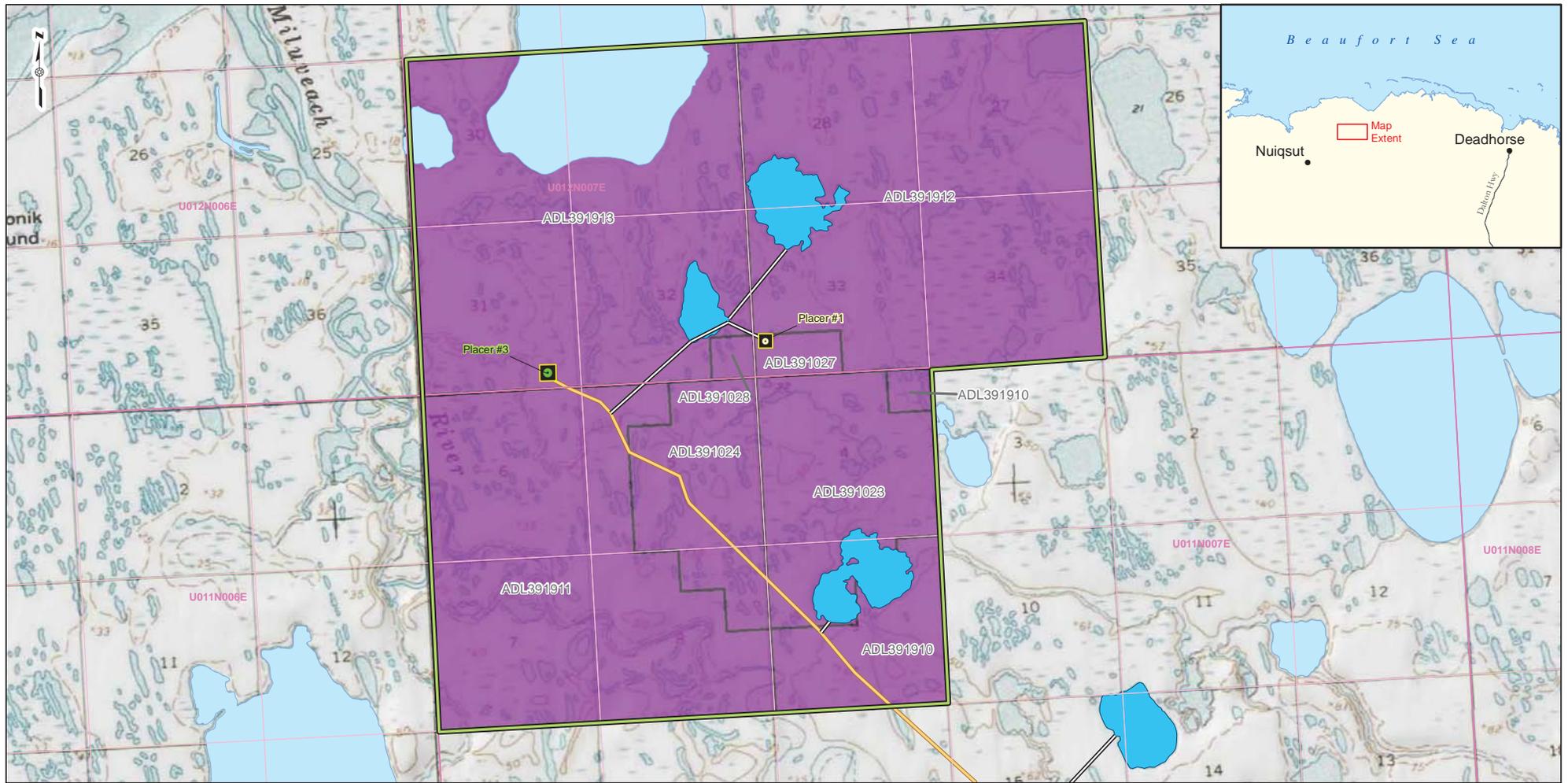


- Placer #1
- Placer #3
- Placer Unit Boundary
- Proposed Ice Drill Pad
- Alternative Water Source
- Potential AEX Water Source
- Kuparuk River Unit
- Southern Miluveach Unit
- Facility
- MTRS
- AEX Proposed Ice Road
- Lake Access Ice Road
- Active Primary/Secondary Road

ASRC EXPLORATION LLC

DETAILED PROJECT AREA
AEX Placer
Plan of Operations





- Placer #1
- Placer #3
- Placer Unit Boundary
- Alternative Water Source
- Potential AEX Water Source
- Proposed Ice Drill Pad
- ASRC Exploration LLC Lease
- MTRS
- AEX Proposed Ice Road
- Lake Access Ice Road

ASRC EXPLORATION LLC

PROJECT COMPONENTS
AEX Placer
Plan of Operations

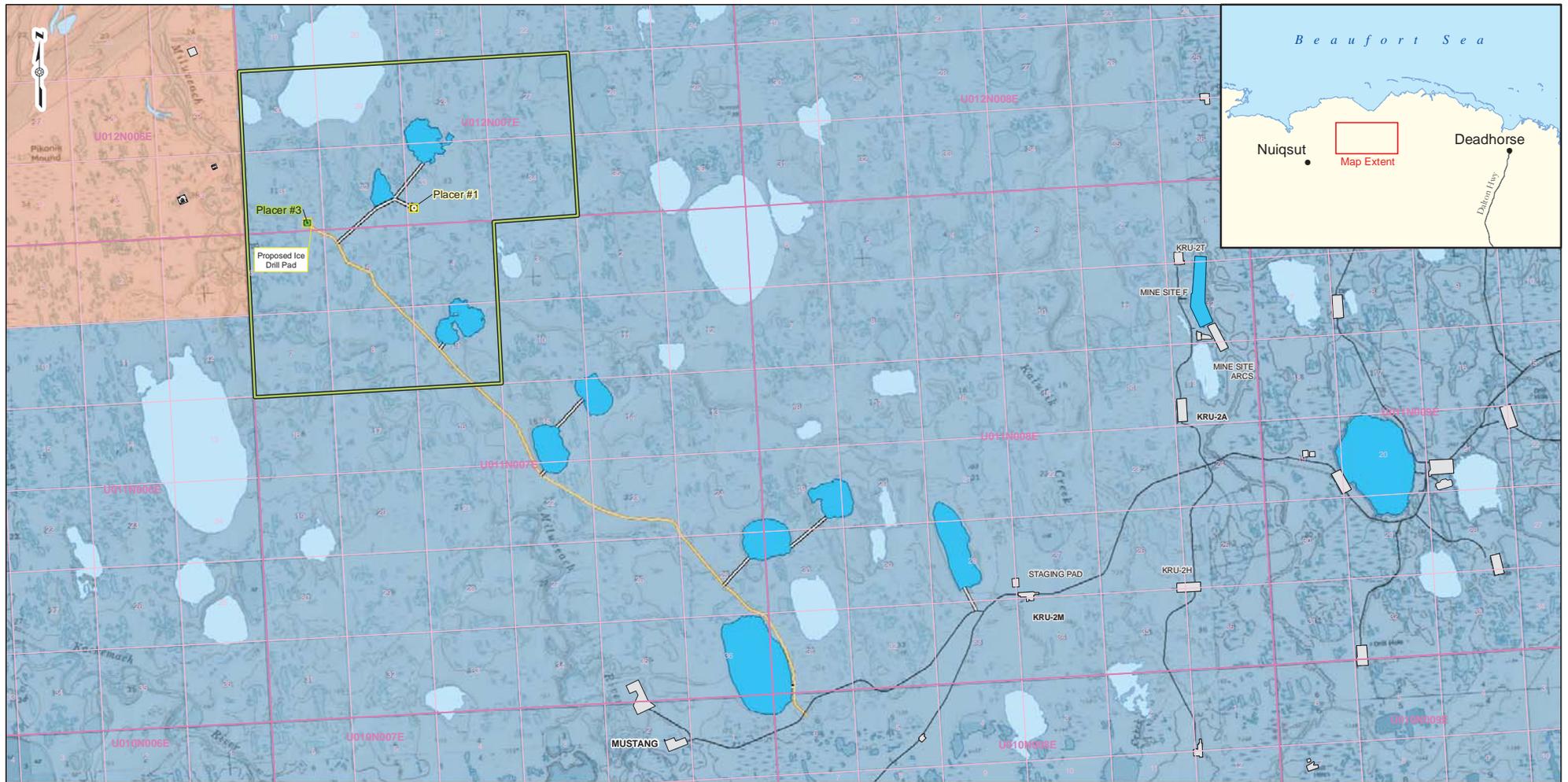
SCALE:



FIGURE:

3

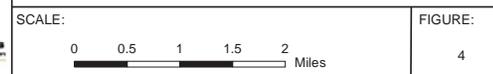


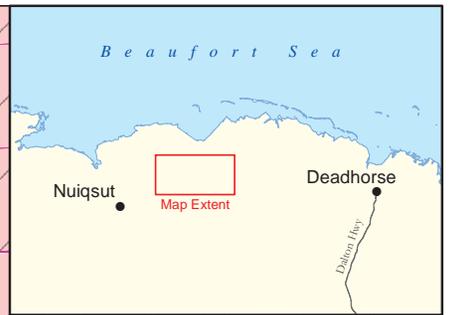
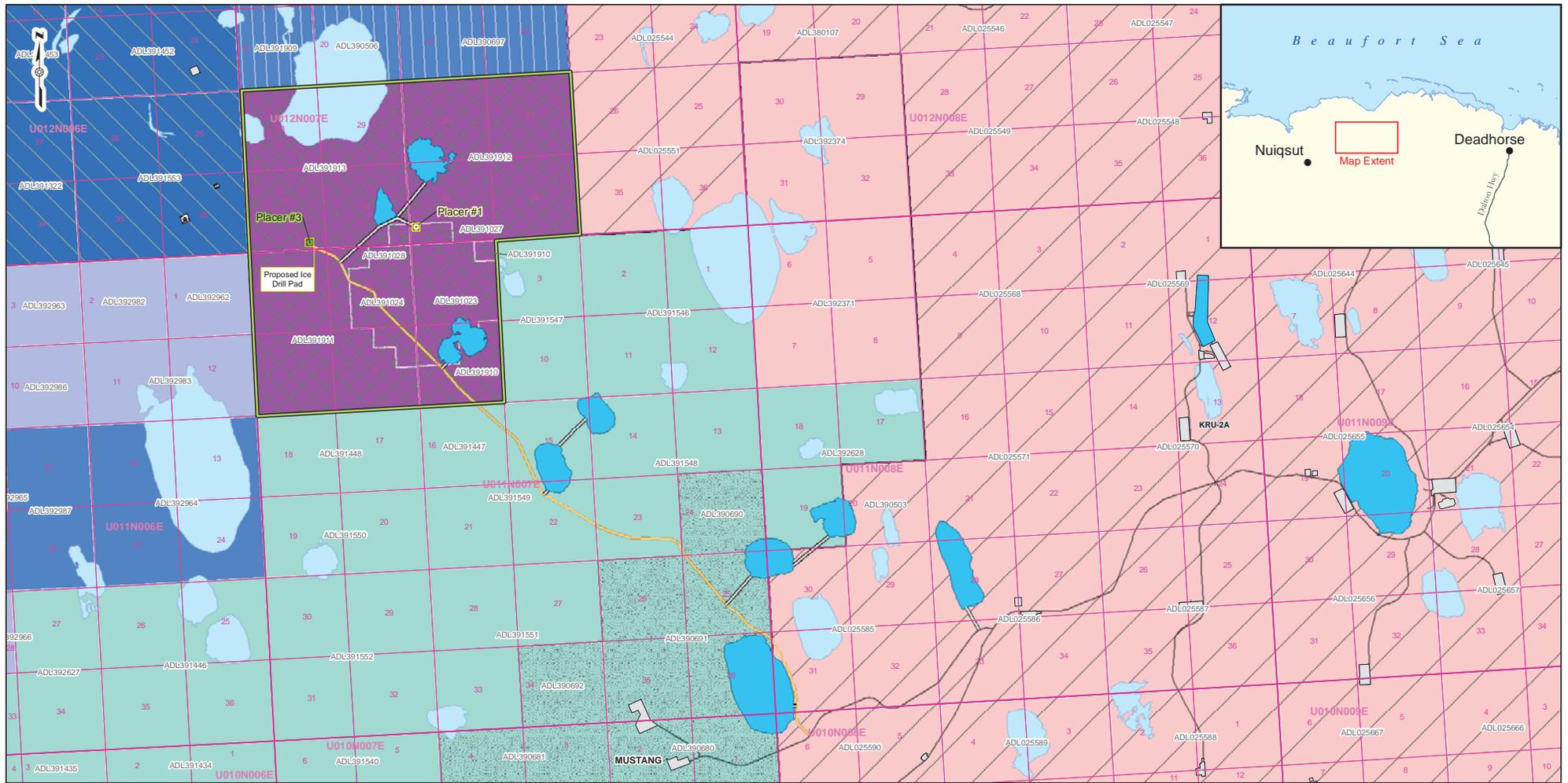


- Placer #1
- Placer #3
- Placer Unit Boundary
- Alternative Water Source
- Potential AEX Water Source
- Proposed Ice Drill Pad
- Facility
- MTRS
- Land Owner
Kuukpik Corp.
- Land Owner
State of Alaska
- AEX Proposed Ice Road
- Active Primary/Secondary Road

ASRC EXPLORATION LLC

SURFACE OWNERSHIP AEX Placer Plan of Operations





Placer #1	Alternative Water Source	Unit Name	Lease Owner	Caelus	AEX Proposed Ice Road
Placer #3	Potential AEX Water Source	Kuparuk River Unit	70 & 148 LLC	ConocoPhillips	Lake Access Ice Road
Placer Unit Boundary	MTRS	Ooguruk Unit	ASRC Exploration LLC	Repsol	Active Primary/Secondary Road
Proposed Ice Drill Pad		Pikka Unit	Brooks Range Petroleum		
		Placer Unit			
		Southern Miluveach Unit			

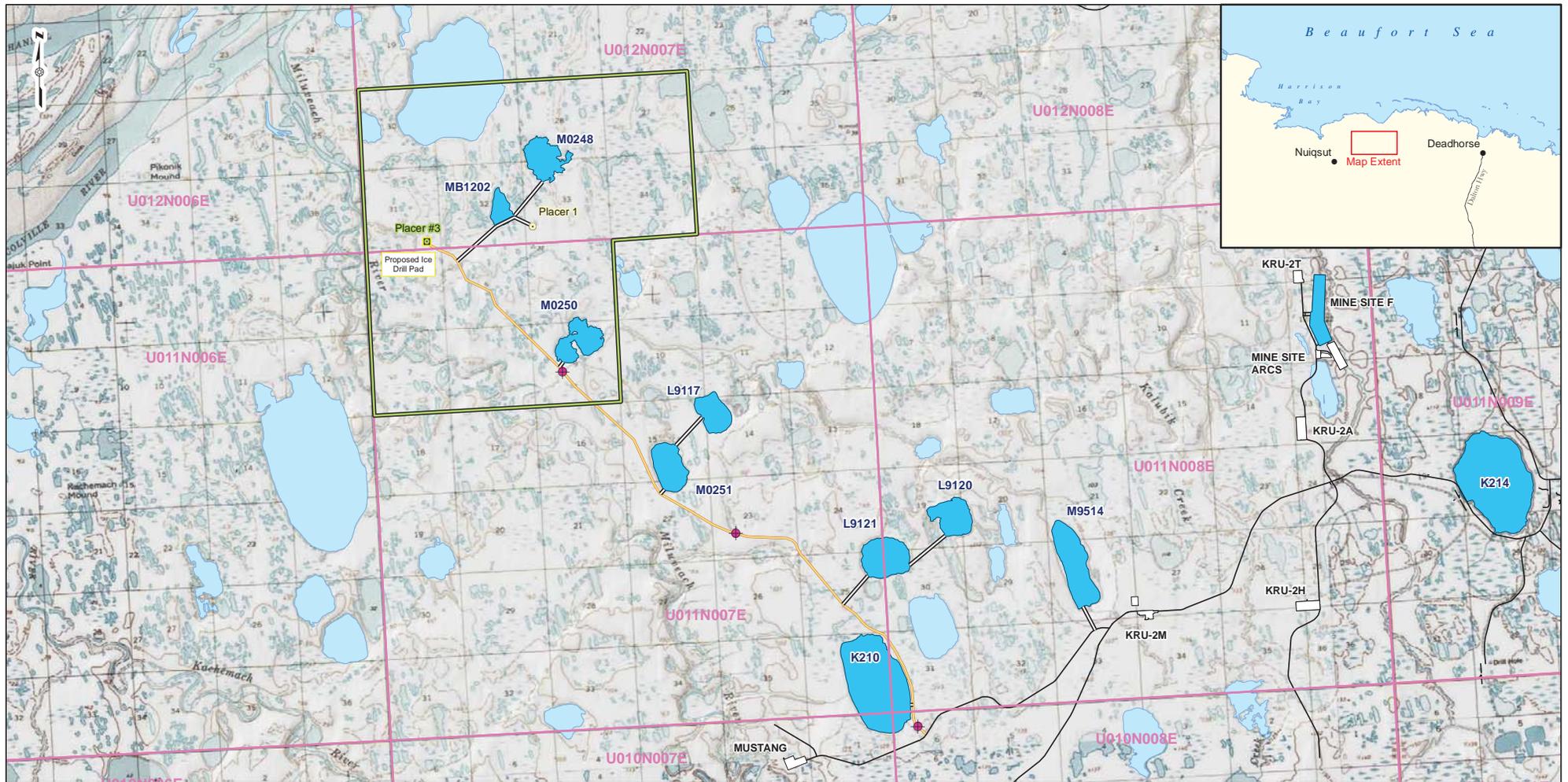
ASRC EXPLORATION LLC

**MINERAL ESTATE
AEX Placer
Plan of Operations**

SCALE: 0 0.5 1 1.5 2 Miles

FIGURE: 5



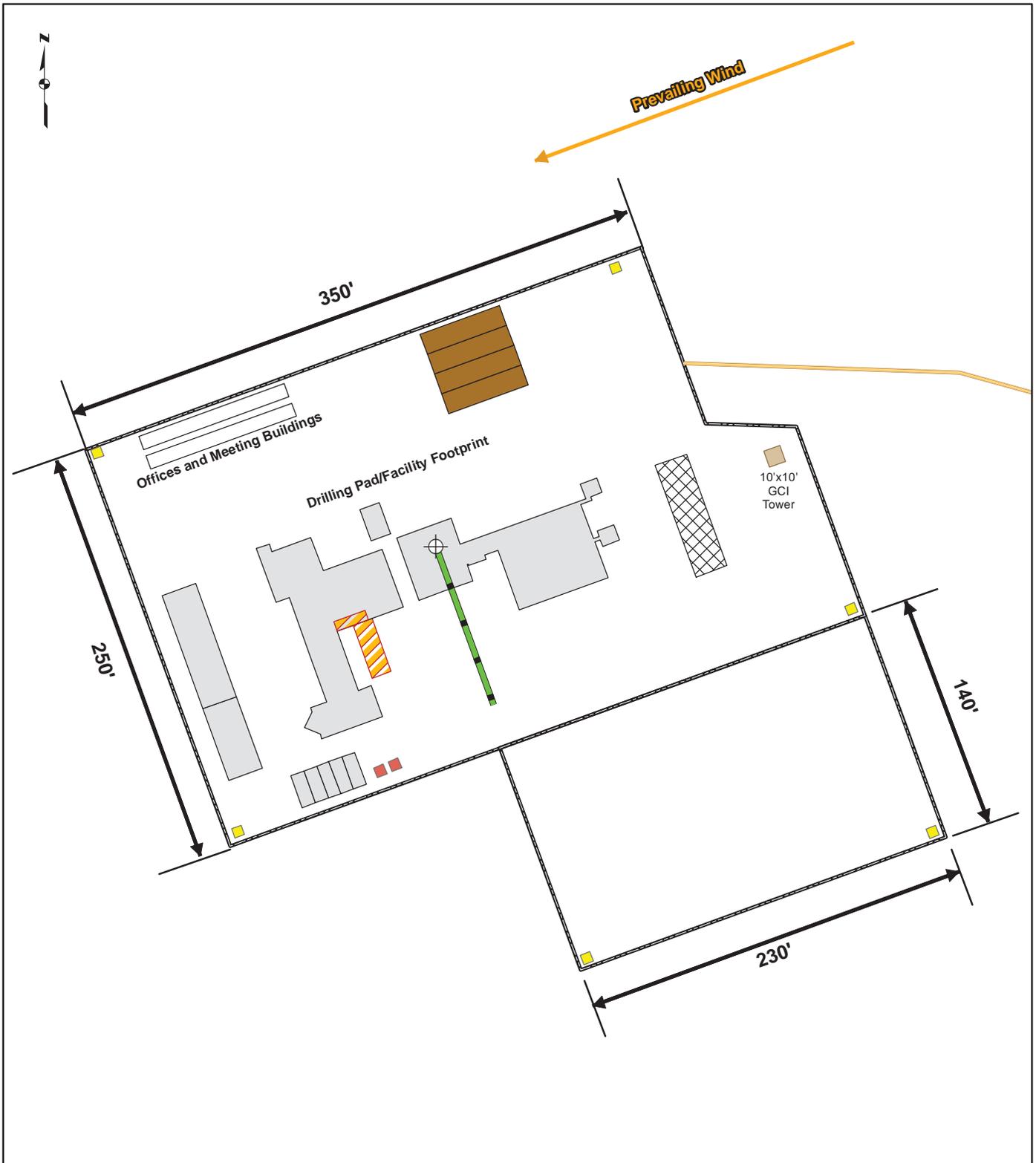


- Placer 1
- Placer #3
- Thermistor Location
- Placer Unit Boundary
- AEX Proposed Ice Road
- Lake Access Ice Road
- Primary Gravel Road
- Alternative Water Source
- Potential AEX Water Source
- Proposed Ice Drill Pad
- Facility

ASRC EXPLORATION LLC

POTENTIAL AEX WATER SOURCES
AEX Placer
Plan of Operations





- | | | |
|-------------|------------------|--------------------------|
| Pad Layout | Fuel Tank | Diverter Line (100 feet) |
| Cutting Bin | Office Buildings | Proposed Ice Road |
| Dumpster | Tubular Storage | Surface Location |
| Facilities | Light Plant | |

ASRC EXPLORATION LLC

PLACER #3 DRILLING LOCATION PAD DIAGRAM
 ASRC Exploration, LLC
 Placer Exploration Drilling Phase



FIGURE:
7



NOTES

1. DATE OF FIELD SURVEY 11-12-2015
2. CONTOUR INTERVAL 1.0'
3. BASIS OF COORDINATES PER OPUS SOLUTION OF STATIC GPS OBSERVATIONS 11-12-2015.
4. LOCATED WITHIN PROTRACTED SEC 31, T12N, R7E
993' FROM EAST SECTION LINE, SEC. 31.
495' FROM SOUTH SECTION LINE, SEC. 31

AS-STAKED PLACER #3 LOCATION

NAD-83 ZONE 4 (VERTICAL = NAVD88 GEOID 12AAK)

N 5,975,706.094

E 1,585,029.600

EL 16.306

NAD-83

N 70°20'40.848"

W 150°26'58.466"

NAD-27 ZONE 4

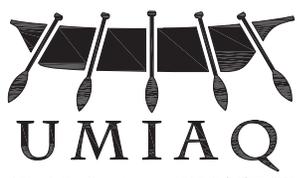
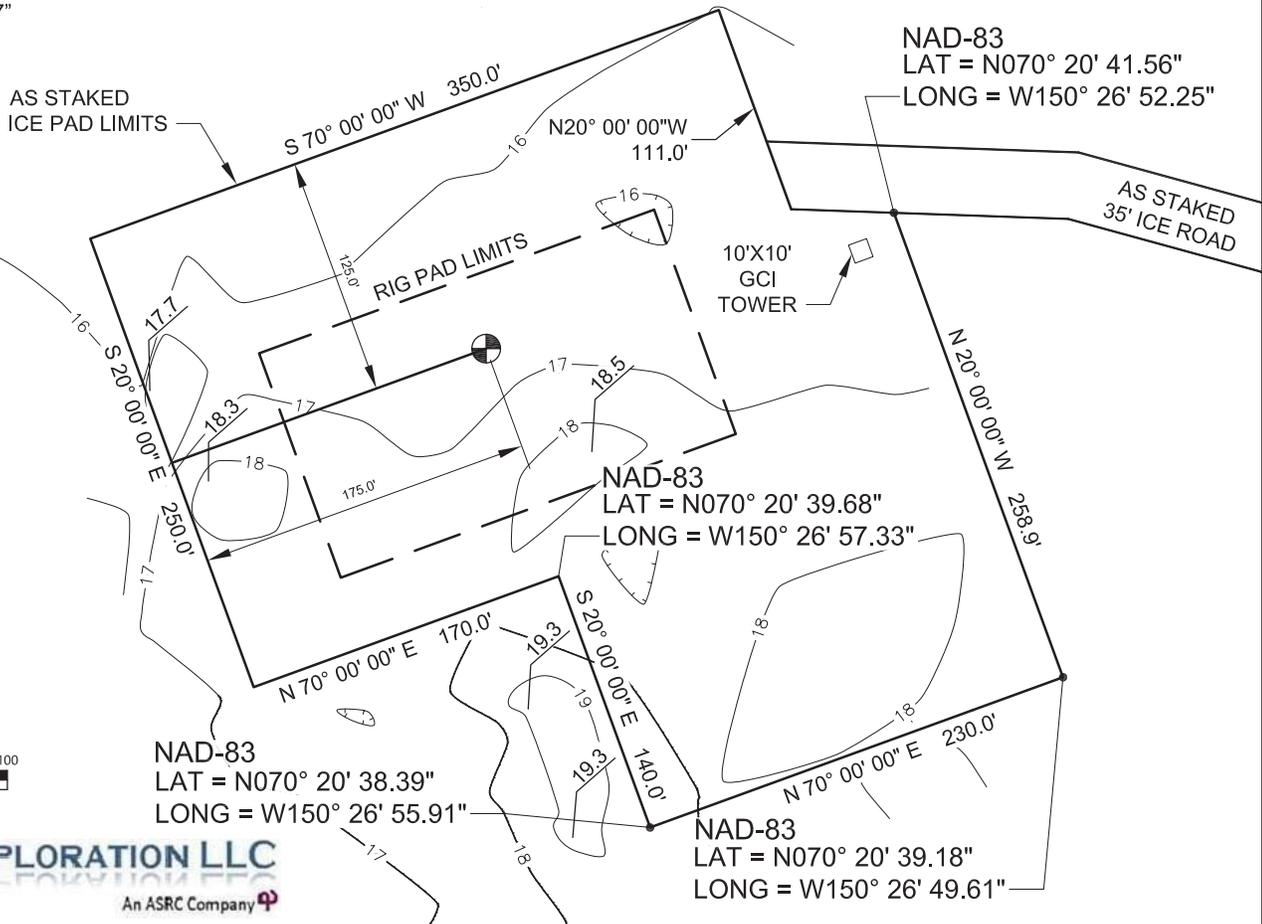
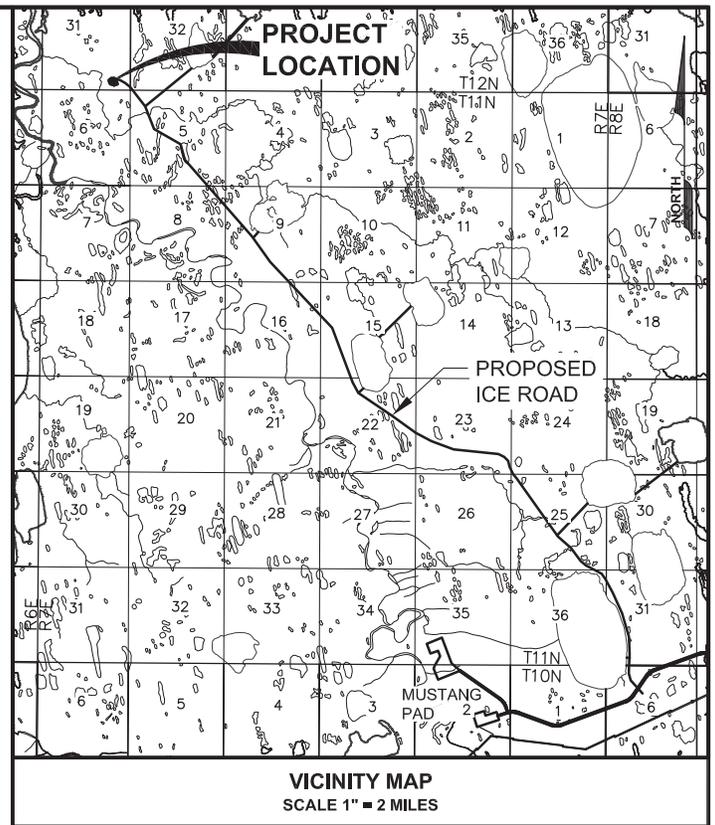
N 5,975,956.764

E 444,997.019

NAD-27

N 70°20'41.973"

W 150°26'47.197"



6700 Arctic Spur Road · Anchorage, AK 99518 · (907) 877-8220

**AEX PLACER #3 ICE ROADS AND PAD
SITE TOPOGRAPHIC SURVEY**

ALASKA

REVISION #2

DATE:	11/24/2015	DRAWN BY:	AJG	Figure 8
SCALE:	AS SHOWN	CHECKED BY:	KJP	JOB No: 80127.15

FILE: M:\Surveying\80127.15 Placer #3 Ice Road & Pads\Dwg\Block\80127.15_SITE TOPO_r02.dwg
 PRINTED: 11/24/2015 09:02:02 a.m. griffin LAYOUT: Layout 1 XREFS: None IMAGES: LOGO-AEX.JPG

Appendix B: Agency and Public Comments

During the agency and public notice periods, one comment was received from the Alaska Department of Environmental Conservation (DEC) Wastewater Discharge Section. The comment expressed the expectation that AEX meet all applicable statutes and regulations, and obtain permits and approvals prior to wastewater discharge. The comment was forwarded to the applicant. A response was neither expected nor received.