



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

Division of Oil and Gas

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December 22, 2016

Erik Opstad
General Manager-Alaska Operations
Accumulate Energy Alaska, Inc.
PO Box 112212
Anchorage, AK 99511

RE: LONS 16-006, Accumulate Energy Alaska, Inc. Icewine-2 Exploration Well, Lease Plan of Operations Decision, Exploration Phase

Dear Mr. Opstad:

I. INTRODUCTION

On September 8, 2016 Accumulate Energy Alaska, Inc. (AEA, Applicant) submitted a request to the Division of Oil and Gas (Division) for approval of a Lease Plan of Operations (Plan) to carry out the drilling of the Icewine-2 Exploration Well (IW-2). The IW-2 is approximately 30 miles south of Deadhorse adjacent to the Dalton Highway on the Franklin Bluffs gravel pad (FBP). Approval of this Plan, along with approvals from other state and federal agencies (Agencies), is necessary for AEA to carry out the IW-2. Any further exploration is subject to further review and approval by the Department of Natural Resources (DNR).

After state land is leased for oil and gas development, projects currently follow a phased progression. These phases may include exploration, development, production, and transportation. The Division continually examines effects of oil and gas activities as projects transition throughout each phase. Before the next phase of a project may proceed, public notice and opportunity to comment as well as Division approval is required. AEA's proposed operations would begin the Exploration phase for Oil and Gas Lease ADLs 392298, 392785, 393133, and 393078. The Oil and Gas Lease ADL 392301 was previously phased and evaluated for the Icewine #1 project in 2015.

II. SCOPE OF DECISION

The DNR Commissioner has delegated authority for approval of Lease 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) 83.158. As set forth below, the Division has evaluated the proposed Plan to determine if it provides sufficient information as required by

11 AAC 83.158. In approving a Plan, the Division may require amendments that it determines are necessary to protect the State's interests (11 AAC 83.158(e)).

The Icewine-2 Plan is derived from relevant drilling and geological data obtained from the immediately adjacent Icewine #1 Core Well, as well as other historical offset wells in the surrounding area. Icewine-2 is planned as a 11,200 foot vertical wellbore to be completed in the Highly Radioactive Zone (HRZ) shale.

The IW-2 Plan consists of three separate project phases:

Phase-I plans to drill a vertical pilot hole through hydrocarbon bearing zones within the HRZ Shale to a total depth of 11,200 feet. Formation evaluation using measurement while drilling (MWD), logging while drilling (LWD), and wireline will be conducted in the open hole, along with other special applications such as rotary sidewall coring, repeat formation tester (RFT) fluid sampling and Vertical Seismic Profile (VSP).

Phase-II of the program expects to conduct hydraulic stimulation and flow-back testing of prospective intervals to evaluate reservoir production characteristics of the HRZ. At the conclusion of Phase-II, the well may be temporarily secured or formally suspended while the initial test data is evaluated and analysis is completed.

Phase-III of work could be undertaken to include sidetracking, deepening the well or drilling a lateral horizontal leg to further evaluate targeted horizons. Such additional drilling and testing would most likely be conducted during the 2018 season. After completing the testing program or any subsequent activities related to the Icewine-2 horizontal (IW-2H) leg that may be undertaken in 2018, both wellbores (Icewine-2 and Icewine-2H) or any other wellbore that may result from additional exploration and evaluation work, will be plugged and abandoned following Alaska Oil and Gas Conservation Commission (AOGCC) guidelines.

The following Plan elements require authorization from other Agencies:

Agency	Permit Type
AOGCC	Permit to Drill
AOGCC	Blowout Contingency Plan
AOGCC	Sundry Approval
AOGCC	Annular Disposal
ADEC	Minor General Permit 1
ADEC	Oil Discharge Prevention and Contingency Plan
ADEC	Temporary Storage of Drilling Waste
ADEC	Temporary Storage of Non-Drilling Waste
ADEC	Waste Treatment Plan
ADEC	Alaska Pollutant Discharge Elimination System
ADFG	Public Safety Permit
ADFG	Title 16 Permit
DMLW	Temporary Water Use Authorization
EPA	Spill Prevention, Control, and Countermeasure
NSB	Land Management Regulations Permit

NSB	Cultural Resources Permit
SHPO	Section 106
USACE	Section 404
USFWS	Migratory Bird Permit
APSC	LNO for water source access

III. LAND STATUS

The exploration project area is comprised of state lands.

A. Division's Leased Lands:

Oil and Gas Lease ADL: 392301

Oil and Gas Mineral Estate Lessee(s): Accumulate Energy Alaska, Inc.

Title Reports: DNR Title Reports (RPT 7571 and RPT 4218)

Special Use Lands: ADL 050666 – Division of Mining, Land, and Water

Jointly Managed Lands: N/A

Other third party interests: Parties operating on or adjacent to the FBP:

ADL 418232 - Alyeska Pipeline Service Company

ADL 420360 - Alyeska Pipeline Service Company

ADL 420360 - Alyeska Pipeline Service Company

ADL 414573 - Alyeska Pipeline Service Company

LAS 030367 - Alyeska Pipeline Service Company

ADL 063574 - Trans-Alaska Pipeline System

ADL 418997 - Alaska Gasline Development Corp.

ADL 415408 - Alaska Department of Transportation

ADL 063826 - Alaska Department of Transportation

ADL 412378 – State Land Survey

ADL 414835 - North Slope Borough

LAS 020644 - ADFG Sport Fish

LAS 027609 - Marsh Creek, LLC

LAS 030135 - SAExploration, Inc.

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Icewine-2 Well	UM T04N R14E S09	Lat: 69.7172313, Long: -148.7028066 NAD 27
Drill Rig	Same as well site	Same as well site
Camp Facilities and Staging	Same as well site	Same as well site

Oil and Gas Lease ADL: 392298

Oil and Gas Mineral Estate Lessee(s): Accumulate Energy Alaska, Inc.

Special Use Lands: ADL 050666 – Division of Mining, Land, and Water

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
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Potential Bottom Hole Location	UM T04N R14E S02,03,10,11	To be decided (TBD)
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Oil and Gas Lease ADL: 392785

Oil and Gas Mineral Estate Lessee(s): Accumulate Energy Alaska, Inc.

Special Use Lands: ADL 050666 – Division of Mining, Land, and Water

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Potential Bottom Hole Location	UM T05N R14E S28,29,32,33	TBD

Oil and Gas Lease ADL: 393133

Oil and Gas Mineral Estate Lessee(s): Accumulate Energy Alaska, Inc.

Special Use Lands: ADL 050666 – Division of Mining, Land, and Water

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Potential Bottom Hole Location	UM T05N R14E S26,27,34,35	TBD

Oil and Gas Lease ADL: 393078

Oil and Gas Mineral Estate Lessee(s): Accumulate Energy Alaska, Inc.

Special Use Lands: ADL 050666 – Division of Mining, Land, and Water

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, & Section(s)	GPS Coordinates
Potential Bottom Hole Location	UM T04N R14E S01,02,11,12	TBD

IV. PROPOSED OPERATIONS

The Plan describes the proposed operations in full detail. The key details are summarized below.

A. Sequence and Schedule of Events

A table below displays AEA's proposed schedule for the 2017 to 2018 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-season reconnaissance	7/15/2016	8/15/2016
2	(Potential) Maintenance of drill site and access roads.	1/1/2017	1/31/2017
3	Camp mobilization	2/1/2017	2/15/2017
4	Drill Rig mobilization	2/15/2017	3/1/2017
5	IW-2 exploration drilling	3/1/2017	4/15/2017
6	IW-2 completion, hydraulic stimulation and well flow testing	4/15/2017	5/15/2017
7	IW-2 suspension or Plug and Abandon (P&A) and demobilization	5/15/2017	6/15/2017
8	IW-2 Phase-2 (Optional) Well Testing Program- (requiring remobilization, P&A, and final demobilization)	TBD-2018	TBD-2018

B. Well Site

AEA plans to use the existing FBP area on Alaska's North Slope to support IW-2 drilling, completion and well testing operations. The surface area occupied by the Icewine-2 Project will be approximately the same as used for the Icewine-1 Exploration Well that was P&A'd in January 2016. As platted, Icewine-2 is located 50 feet due west of the Icewine-1 Well. Collision Avoidance Protocols will be fully implemented to ensure adequate separation is maintained between Icewine-2 and all other legacy wellbores on the pad.

A designated AEA representative(s) will be located onsite during operations. Operations will be conducted 24 hours and will involve two shifts (one day and one night).

C. Buildings

Temporary buildings during the program will include a satellite office, an approximately 72-bed camp, and maintenance buildings. The camp will consist of offices, camp clinic (with medic), bathroom facilities, dining area, kitchen and food storage facilities, recreation area(s), and laundry facilities. The camp will be equipped with potable and wastewater modules with regular replenishment and disposal services provided from Deadhorse. The camp will be powered by a dual generator set, with one designated as stand-by. The camp will be located on the FBP for the duration of the project. If the IW-2 project ends at Phase II all equipment associated with the project will be demobilized to Deadhorse via the Dalton Hwy.

D. Fuel and Hazardous Substances

Fuel Storage:

IW-2 exploration well drilling and testing operations will require the temporary storage of fuel, petroleum products and miscellaneous drilling fluids and additives. Up to 20,000 gallons of ultra-low sulfur diesel (ULSD) and unleaded gasoline (ULG) fuel will be stored within the IW-2 drill site on the FBP. The fuel storage tanks (<10,000 gallons) will be appropriately marked and installed in a bermed and impermeable lined secondary containment cell designed to hold a minimum of 110 percent (110%) of the largest fuel storage tank. Fuel, drilling/completion fluids and other various additives will be supplied and transported to the site from commercial vendor sources in Deadhorse. Fuel storage, handling, transfers, and spill reporting will be conducted in accordance with AEA's Oil Discharge Prevention and Contingency Plan (ODPCP) (15-CP-5241), North Slope Environmental Field Handbook (NSEFH), and the Alaska Safety Handbook. All bulk hazardous fluid and fuel transfers will be conducted in accordance with the fluid transfer guidelines described in the NSEFH and AEA's Fluid Transfer Checklist (found in Appendix A of AEA's ODPCP). A variety of commonly used water-based (WBM) and mineral oil-based drilling fluids and additives will be used to provide and maintain the correct drilling mud formulation for the conditions being drilled. The various additives are either dry-bulk packaged in sacks contained in lined mud boxes or shrink wrapped pallets. Dry-bulk cement for the various casing strings are typically stored in "pneumatic-feed" silos, located adjacent to the rig. Other liquid drill fluid chemicals are provided in 5-gallon pails, 55-gallon drums or a variety of different sized (250-400 gal) "chem-totes". All drill fluid additives are stored in a secure fashion and in secondary containment where applicable, with the inventory constantly monitored for use. The secure storage and chemical containment is inspected daily by the on-site Chadux spill technician. Other drill fluid chemicals that may be brought on site include specialty products required for the well stimulation and completion/flow testing. These materials are stored in a similar secure fashion and utilized in a relatively short timeframe. All unused chemical or specialty products will be returned to the supplier.

All used products are disposed of in accordance with AEA's Waste Management Plan and other applicable guidance documents and contract/ballot agreements. During fuel and fluid transfer operations, equipment storage or maintenance activities, the site will be protected from leaking or dripping fuel and hazardous substances using drip pans or other surface liners designed to catch and hold fluids under the equipment or by creating a specialized area using an impermeable liner or other suitable containment mechanism. During fuel or hazardous substance transfer, secondary containment or a surface liner (duck ponds) will be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment (Chadux Spill Response Connex), as required in the Icewine Project ODPCP, will be staged on location and managed/maintained by the on-site Chadux spill technician. Drip pans will be placed under vehicles and equipment capable of leaking hazardous fluids. Vehicle refueling will occur on the pad, which is located outside of the Sagavanirktok River floodplain. Trained spill technicians and fuel contractor personnel, operating under the Fluid Transfer Procedures, will attend all fuel and fluid transfer operations at all times.

ODPCP: An ODPCP (C-Plan) for the Icewine Project has been prepared. The approved AEA Icewine C-Plan (#15-CP-5241) will be kept on site at all times for guidance in controlling and cleaning up any accidental discharges of fuels, lubricants, or produced fluids. The plan will include immediate response actions, reporting requirements, communication trees, receiving environments, spill cleanup mobilization response times, well control information and spill

prevention guidance. Information related to immediate response actions, receiving environments, spill cleanup mobilization response times and well control can be found in the ODPCP.

Spill Prevention Control and Countermeasure Plans (SPCC): The drilling and well testing contractors will develop and provide SPCC plans specific for their operations in support of the IW-2 operations. The plans will be maintained and available on-site. Contractor crews will be trained in the appropriate response and prevention strategies.

E. Solid Waste Sites

Waste Management and Disposal:

All waste management activities will be conducted in general accordance with the AEA IW-2 Project Waste Management Plan (WMP). In addition to and in conformance with the AEA HSE Policy, the Alaska Safety Handbook (ASH; 2014 ed.), the NSEFH and the Alaska Waste Disposal and Reuse Guide (Redbook) are adopted as guidance, reference and standard operating procedures and workplace “best” safety, environmental and waste management practices for AEA operations on the North Slope of Alaska.

Drilling Wastes:

All drilling wastes will be managed and temporarily stored onsite in accordance with the ADEC Solid Waste permit. All drilling wastes will be managed and disposed of in accordance with the Redbook, using the North Slope Manifest procedures, and under the terms and conditions specified in the Prudhoe Bay Unit (PBU) ballot agreement and BP Exploration (Alaska) Inc. (BPXA) and AEA Third Party Waste Analysis Plan (WAP). Waste drilling fluids and cuttings will be transported to the BPXA DS4 Grind and Inject (G&I) facility or other approved facilities, for treatment and disposal. On-site disposal, through annular injection, as approved by the AOGCC (Sundry Form 10-403), may also be utilized. Drilling waste fluids will be stored in closed top tanks, placed in appropriately sized bermed and lined secondary containment. Approximately 100-200 barrels per day (bpd) of drill fluid wastes may be generated during IW-2 drilling operations. Waste drilling fluids will be hauled, on a regular basis, to the G&I plant for offsite disposal or stored onsite for annular injection. Drill cuttings will be temporarily stored in steel shale bins and either hauled directly by SuperSucker Trucks to the G&I plant or allowed to freeze-back for transport in side-dump trucks to the G&I plant. Non-oily drill cuttings that meet the specifications for North Slope Borough (NSB) Service Area (SA)-10 landfill disposal will be approved, manifested, and hauled to the Oxbow Landfill and beneficially reused as sanitary cover. After the removal of drilling wastes from the storage area, a visual site inspection will be performed to verify that all drilling wastes has been removed. A final site inspection report, including drilling waste volume and final disposition will be submitted to ADEC within seven days of the site inspection, as required by 18 AAC 60.430. All drilling waste will be disposed of at the completion of IW-2 drilling operations.

Produced Fluids:

Well stimulation and flow testing is planned for the IW-2. The well testing equipment inventory will include a 3-phase test separator system, produced gas flare and sufficient tankage to collect and store produced fluids over the well testing period. All prescribed tankage will be positioned in secondary containment on the pad. At the conclusion of the well test period, the collected/stored produced fluids will be either (1) disposed into the formation from which it was produced based on limited quantities, with AOGCC approval, (2) transported to an approved processing/product recovery or disposal facility, or (3) via annular injection.

Approval of the annular injection process will be through the AOGCC as issued by a 10-403 Sundry form.

Wastewater:

Camp wastewater will be temporarily stored in the camp sewage tank module and hauled on a regular basis to the NSB-SA-10 wastewater treatment plant for disposal. The rig camp should generate less than 2,500 gallons of domestic wastewater per day.

Non-Drilling Solid Waste:

Solid waste management will comply with Federal, State, and local regulations to prevent attracting wildlife. The food waste that could attract wildlife will be stored in enclosed dumpsters and backhauled on a regular basis to Deadhorse for disposal. Non-drilling solid waste will be temporarily stored on-site and periodically hauled to existing North Slope facilities for proper treatment and disposal. Non-hazardous solid, waste will be segregated and deposited in marked dumpsters located at the site. Camp food and putrescible waste will be placed in dumpsters with an animal proof lid. These containers will be hauled to the Oxbow Landfill for disposal. Waste from operations will be reduced, reused, or recycled to the maximum extent practicable. Oily waste will be managed and stored onsite until transport to an approved disposal facility. Used oil will be packaged in drums for transport and be recycled or disposed at an approved facility. Small quantities of hazardous waste will be managed onsite in Satellite Accumulation Areas (SAA) and transported to an approved disposal facility at the completion of the field operations.

F. Water Supplies

Water requirements for the program are expected to be approximately 1.2 million gallons for drilling and 0.5 million gallons for camp operations. Potable water will be obtained from the NSB-SA-10 Water Plant in Deadhorse and hauled to the site in stainless steel tanker trucks. Water for support of drilling operations will be withdrawn from existing water sources near the project site. Up to 5 water sources will be permitted with the ADNRM DMWL Temporary Water Use Authorization (TWUA). Water withdrawal from fish-bearing lakes will be permitted by ADFG Fish Habitat Permit (FHP).

G. Utilities

Permanent utilities will not be designed or located on the FBP. AEA will operate its IW-2 drill program on diesel generators. The camp will be powered by a dual generator set with one generator designated as a stand-by generator. Phone service and internet will be available at the field camp. Hand-held radios will be used for intra-well site communications.

H. Material Sites

Not Applicable. No material site operations are required for the Icewine-2 operations.

I. Roads

AEA plans for year round access to the FBP IW-2 drill location from the Dalton Highway. The well is located within leases issued by the State of Alaska and will be accessed by an existing gravel access road from the Dalton Highway to the FBP drill site. Equipment and materials for drilling will be located on the FBP. Public access to, or use of, the lease area will not be restricted, except within the immediate vicinity of drill site, camp, associated buildings, and other related facilities. Areas of restricted access will be identified after mobilization and rig-up. No facilities will be located so as to block access to or along navigable or public waters.

J. Airstrips

There is an existing, unnamed airstrip to the east of the FBP. AEA is not aware of the condition or use of this airstrip. However, this airstrip will not be utilized during this project. Access to this existing airstrip will not be restricted as a result of this project.

K. All Other Facilities and Equipment

If AEA elects to suspend the IW-2 Phase-I and II well testing operations in order to evaluate the flow test data, support equipment may be secured on the FBP IW-2 area until the execution and completion of the Phase-III test program, which would likely be conducted during the 2018 season. At the conclusion of all IW-2 operations, temporary infrastructure associated with IW-2 will be cleaned of all debris and potential contamination. With this Plan, AEA has requested that the Division approve posting a sign to the general public indicating that access to the IW-2 area (Figure 4) is restricted.

L. Rehabilitation Plan

All debris will be hauled to an approved disposal site upon completion of drilling and testing. The well will be plugged or suspended after well test(s) completion in accordance with AOGCC regulations. The FBP site has Institutional Controls (ICs) overseen by the ADEC. The site was used as a construction camp during construction of TAPS. In 1975, approximately 30,000 gallons of diesel were released to the camp pad and some contamination migrated to nearby wetlands at the edge of the pad. Alyeska conducted initial spill response and cleanup including product recovery according to company procedures. In 1985, Alyeska's camp closeout was approved by DNR. Subsequently, multiple users have occupied the site since it was used as a construction camp. Multiple contaminants have remained from the 30,000 gallon diesel spill. Under this IC, no soil may be removed from this site. ADEC info regarding the ICs for the FBP is available here: <http://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/14>. This site maintains a Notice of Residual Contamination that is recorded on the ADEC database which documents residual contamination remaining on site above the most stringent ADEC cleanup levels. Contaminants of concern include: Gasoline Range, Organics Diesel Range, Organics Benzene, Toluene, Ethylbenzene, and Xylenes. Surface and groundwater monitoring was conducted by the ADEC from 1996 - 2000 at which time the ADEC determined that concentrations of the above were stable or declining.

The proposed level of infrastructure for this project is temporary. The drill rig and all associated facilities will be removed once the project is complete. The program is planned on the existing FBP. The pad will remain in place and continue to be managed by DMLW for surface uses. The project is also utilizing existing access roads that will also remain after project completion.

Upon completion of Phase II, the well will be plugged or suspended in accordance with 20 AAC 25.105 or 20 AAC 25.110. Cleanup operations will be conducted after IW-2 to remove any remaining debris during demobilization activities. Any spills caused by AEA or its subcontractors discovered as part of site closure activities will be chipped or scraped to remove the contaminated material. This material will be transported to an appropriate facility for disposal. AEA will carefully monitor its spill prevention program knowing that the FBP is already contaminated. Tundra damage is not anticipated. AEA will notify DNR and NSB in accordance with lease advisories if any tundra damage is observed. If needed, AEA will further coordinate with DNR to develop a plan for restoration, rehabilitation, and monitoring. The plan

will address the area, type, and extent of damage and will be developed in accordance with the Alaska Coastal Revegetation and Erosion Control Guide (developed by the State of Alaska Plant Materials Center), the Streambank Revegetation and Protection Guide (developed by the ADFG), and other relevant guidance documents.

M. Operating Procedures Designed to Minimize Adverse Effects

Fish and Wildlife Habitats: AEA's activities include measures to minimize impacts on fish and wildlife. This includes mitigation measures outlined in the State of Alaska lease stipulations and adherence to State of Alaska and NSB land management regulations and permit requirements. A wildlife interaction plan and a bear interaction plan (to include both grizzly and polar bear) will be distributed as requested to necessary approving agencies and AEA personnel. AEA selected the existing FBP to minimize adverse effects on vegetation, habitat, wildlife, and cultural resources.

Historic and Archeological Sites: AEA has completed consultation and inventory of prehistoric, historic, and archeological sites on and around the FBP and access roads with the NSB cultural resources department, the SHPO, Alaska Heritage Resources Survey, and the National Register of Historic Places. There are no SHPO and NSB-Inupiat History Language and Culture sites on the FBP.

Public Use Areas:

The proposed operations do not occur in or near a traditional subsistence hunting area and AEA will conduct operations to minimize any adverse effects on subsistence uses and avoid conflicts with private, commercial, and industrial users of the FBP (Figure 5). The program is near existing oil and gas infrastructure and public interest in these activities is expected. The permitting actions associated with the project were public noticed as part of the permitting processes. If there are concerns with regards to the project, AEA will be receptive and pro-active. Public access to the FBP will not be restricted except for the actual drill site area (Figure 4).

Training Programs:

AEA and all contractor and subcontractor personnel will receive an HSE orientation. Additionally, a training program will be designed to inform each individual of the environmental, social, and cultural concerns that relate to their job functions. Training components may include a review of permit stipulations and requirements, cultural awareness, spill prevention and reporting, wildlife interaction, site specific safety, waste management practices, etc. All personnel will participate in a specific training program module for bear safety and a briefing of the Bear Avoidance, Interaction, and Mitigation Plan. In addition, North Slope employees and contractors are required to complete an 8-hour training program provided by the North Slope Training Cooperative (NSTC). A Field Environmental Handbook, Alaska Safety Handbook, and a North Slope Visitor's Guide are used for the training. The training program includes classes on the Alaska Safety Handbook, personal protective equipment, camp and safety orientation, hazard communication, HAZWOPER Level 1, and Environmental Awareness.

In approving a Plan, DNR may require amendments necessary to protect the State's interest (11 AAC 83.158). The Division has determined that to protect the State's interest, it is necessary to incorporate into the Plan the North Slope Mitigation Measures. AEA addressed these mitigation measures in the application process, but it is necessary to amend the Plan to make clear that the Plan incorporates the 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 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. AEA completed the mitigation measure analysis for the North Slope Areawide and no exceptions were requested.

N. Phased Evaluation

This Plan begins AEA's exploration of four Oil and Gas Leases; ADLs 392298, 392785, 393133, and 393078. Oil and Gas Lease ADL 392301 was previously phased and evaluated by Lease Operations number 15-001. The Plan addresses exploration activities for IW-2 and IW-2H, but based on the results of this exploration, the Division anticipates that AEA 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 additional exploration activities that AEA might propose for further exploring the leases.

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 AEA has designed to minimize adverse effects of the Plan activities. These operating procedures include complying with the mitigation measures attached to the leases. 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. AEA has provided a mitigation measure analysis which is required as part of their Plan of Operations submittal.

i. Facilities impacts on the project area.

All proposed facilities are temporary in nature and will take place on the existing FBP. AEA 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 the existing gravel pad and are intended to avoid and minimize impacts to wetlands. No new gravel placement is proposed for AEA's IW-2 exploration program. The Dalton Highway will be used to transport supplies and equipment from Prudhoe Bay to the project area. If the project ends at Phase II, demobilization of the facilities is expected to occur in June 2017 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 AEA 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 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 onsite, 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 Underground Injection Control 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.

AEA's Plan states that waste drilling muds and cuttings will be hauled to the PBU G&I 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 apparatuses. 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. AEA'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 AEA's C-Plan (15-CP-5241), 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. AEA 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 require that sites be protected from leaking or dripping fuel and hazardous substances; secondary containment shall 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.

AEA's mitigation measure analysis states that fuel and hazardous substances will be stored at least 100 feet from any water body and no known surface drinking water sources are in the vicinity of proposed project operations (A.4.b); 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, AEA 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); and solid burnable waste may be incinerated in location. 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 gravel roads and temporary 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 Sagavanirktok River is an anadromous stream, supporting the spawning and overwintering of several species of fish that then migrate to nearshore coastal waters to feed in the summer. Migration patterns vary by species and within species by life stage. 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.

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 associated with transportation corridors, such as the Dalton highway, 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 the Kuparuk River calving area, 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. AEA'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 the proposed Plan activities and activities AEA proposes throughout the exploration phase. Females in dens are at risk for disturbance from any vehicular traffic or noise. Due to its proximity to existing transportation infrastructure, the IW-2 Plan is unlikely to significantly increase temporary displacement and disturbance above the level caused by existing transportation 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 more commonly than 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 and the potential need to shoot "problem" animals. 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, AEA 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. Noise, traffic disturbance, and oil spills generally produce short-term impacts on subsistence species.

The North Slope Areawide BIF 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.

AEA's mitigation measure analysis states that AEA understands the subsistence interests of local residents. AEA conducted a pre-application meeting with the NSB prior to its proposed activities under the Icewine #1 and IW-2 projects. AEA will need to continue complying 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, AEA 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) says, "Development shall not significantly interfere with traditional activities at cultural or historic sites identified in the Coastal Management Program." These provisions give 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. AEA has obtained cultural clearance from the SHPO, North Slope Borough Cultural Resources Department on potential historical, and archaeological resources. Because of the history and long-term use of the FBP, no sites are anticipated that would impact cultural, historical, or archaeological resources.

V. CONSIDERATION OF LEASE PLAN OF OPERATIONS REQUIREMENTS UNDER 11 AAC 83.158(c-d) and 11 AAC 83.160

A. Full Payment of Damages to the Surface Owner 11 AAC 83.158(c)

This project does not occur on non-State surface lands; therefore this regulation does not apply.

B. Plan Sufficiency 11 AAC 83.158(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 83.158(d)).

The information in section IV. Proposed Operations, above, and additional information contained in AEA's proposed Plan satisfy the requirements for a plan under 11 AAC 83.158(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 83.160

Operations will be conducted on state owned land. The proposed well will be drilled into state owned mineral estate. A lessee provides for payment of damages by posting a bond before operations commence, and remains liable for full damages under the lease. AEA has an Oil and Gas Lease Bond in the amount of \$100,000 for operations on ADL 392301 and continuing liability under the lease. An additional single lease bond must be accepted by the Division for each impacted lease before operations may begin on ADLs 392298, 392785, 393133, and 393078. AEA may also furnish a statewide bond in the amount of \$500,000 which satisfies the bond requirements on all subject leases of this Plan.

VII. CONSULTATION WITH OTHER GOVERNMENT ENTITIES

In reviewing the proposed Plan, the Division considered the fact that AEA 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 reviewing 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 9/30/2016 for comment on the Plan: U.S. Army Corps of Engineers; NSB; ADFG; ADEC; and DNR: State Pipeline Coordinator's Section (SPCS), DMLW, Office of History and Archaeology (OHA), and the Division of Oil and Gas. The comment deadline was 4:30 pm Alaska time on 10/14/2016. No extension was requested. Comments were timely 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 Arctic Sounder on 10/24/2016 with a deadline for comments of 11/25/2016 at 4:30 pm Alaska time. Additionally, a copy of the notice was posted on DNR's web site, the State of Alaska online public notice website, and faxes of the public notice were sent to the Barrow, Nuiqsut, and Deadhorse post office(s). 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 following 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 lines, 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 ADEC oil spill report number is (800) 478-9300. DNR and ADEC shall be supplied with all follow-up incident reports.
7. A certified As-Built survey of all improvements shall be provided within one year of placement of the improvement(s). 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:

1. AEA may restrict site access to the portion of the FBP integral for safety and operations as depicted in the AEA pad area figure.
2. AEA will return to the FBP in the summer of 2017 to insure the pad is cleaned of any debris and the surrounding area is returned in good condition.
3. AEA will furnish a statewide bond or additional lease bond(s) before any operations commence on ADLs 392298, 392785, 393133, and 393078. Please ensure additional bonding mechanisms are submitted early enough to allow the Division to evaluate and accept them in a timely manner.

X. FINDINGS AND DECISION


Having considered the specific activities proposed, the best interest finding and associated supplements for the lease sale area within which the project is located, 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, a rehabilitation plan, and a description of operating procedures 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 that it is 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 AEA 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 the advancement of the exploration phase outweigh the possible adverse effects, which have been minimized through imposition of mitigation measures, conditions of

approval, and project specific stipulations, and thus approval of this Plan is in the State's best interest.

8. 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 and entry into the exploration phase.

Sincerely,

for 

Kim Kruse
Permitting Manager
Division of Oil and Gas

12/22/2016
Date

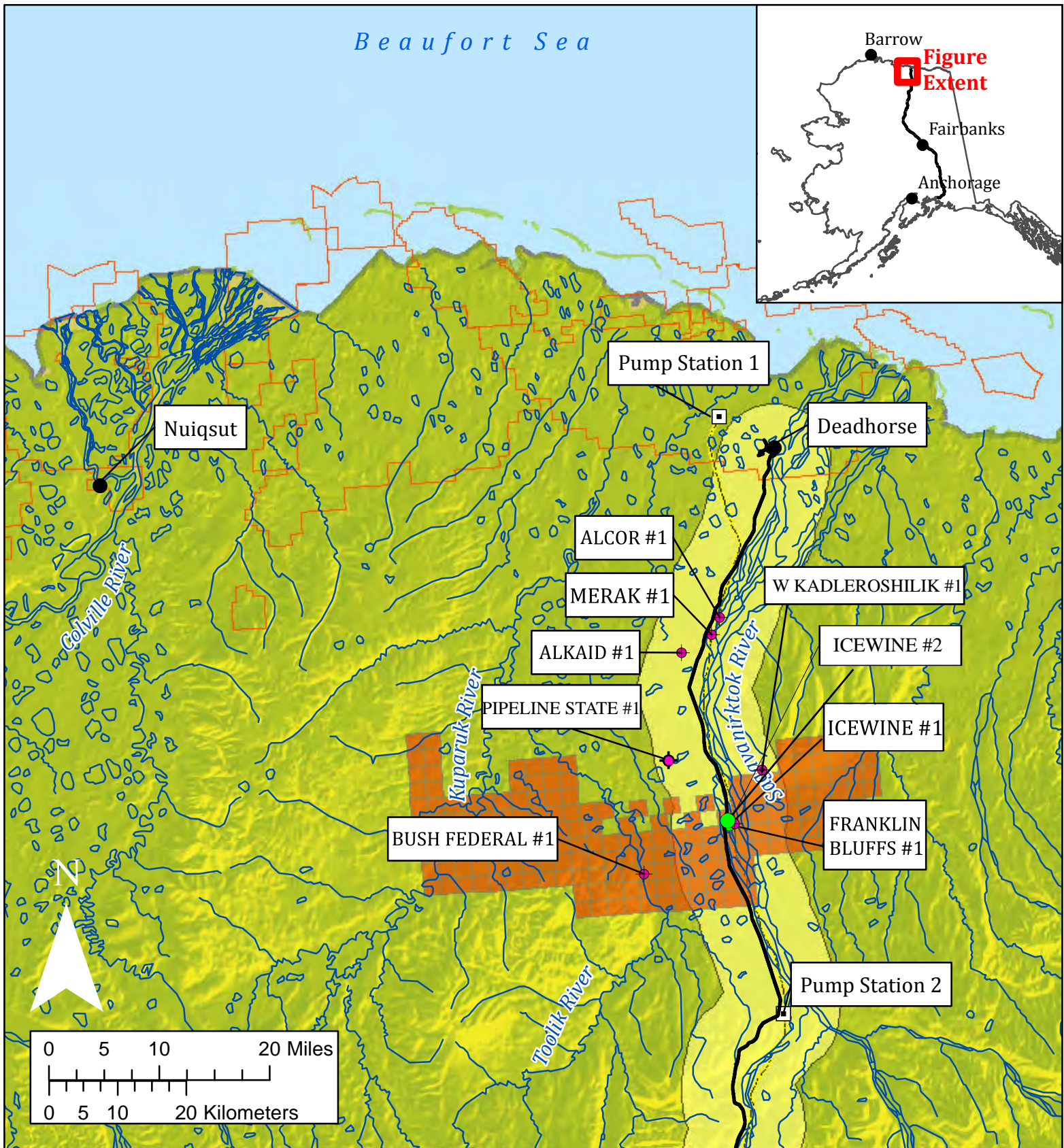
Appeal

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 1-5
- Appendix B: Agency Comments

ecc: DOG: Marta Mueller, Allen Eddy, Kim Kruse, Nathaniel Emery, Paul Blanche, Conor Williamson, Bryan Taylor, Jeanne Frazier, SPCO Records, Jodi Delgado-Plikat
DMLW: Amy Karn, Alexander Wait, Jeanne Proulx, Melissa Head, Matthew Willison, Kimberley Maher, Becky Baird, Henry Brooks
ADFG: Jack Winters, Marla Carter
ADEC: Oil and Gas DEC, Graham Wood
OPMP: N/A
North Slope Borough: Gordon Brower, Hazel Pebley, Jason Bergerson, Josie Kaleak, Rhoda Ahmaogak, Thomas Brower III
Other: Heather Fair (DOT), Peter Nagel (Alyeska Pipeline), DNR Parks OHA, USACOE



- | | |
|---|---------------------------|
| ● ICEWINE #2 Exploration Flow Test Well | --- TAPS |
| □ Pump Stations | ◆ Regional Wells |
| ● Villages | — Dalton Highway |
| — Rivers and Streams | ■ Dalton Highway Corridor |
| □ Oil & Gas Unit Boundaries | |
| ■ Accumulate Energy Alaska Leases | |
| ■ Lakes | |

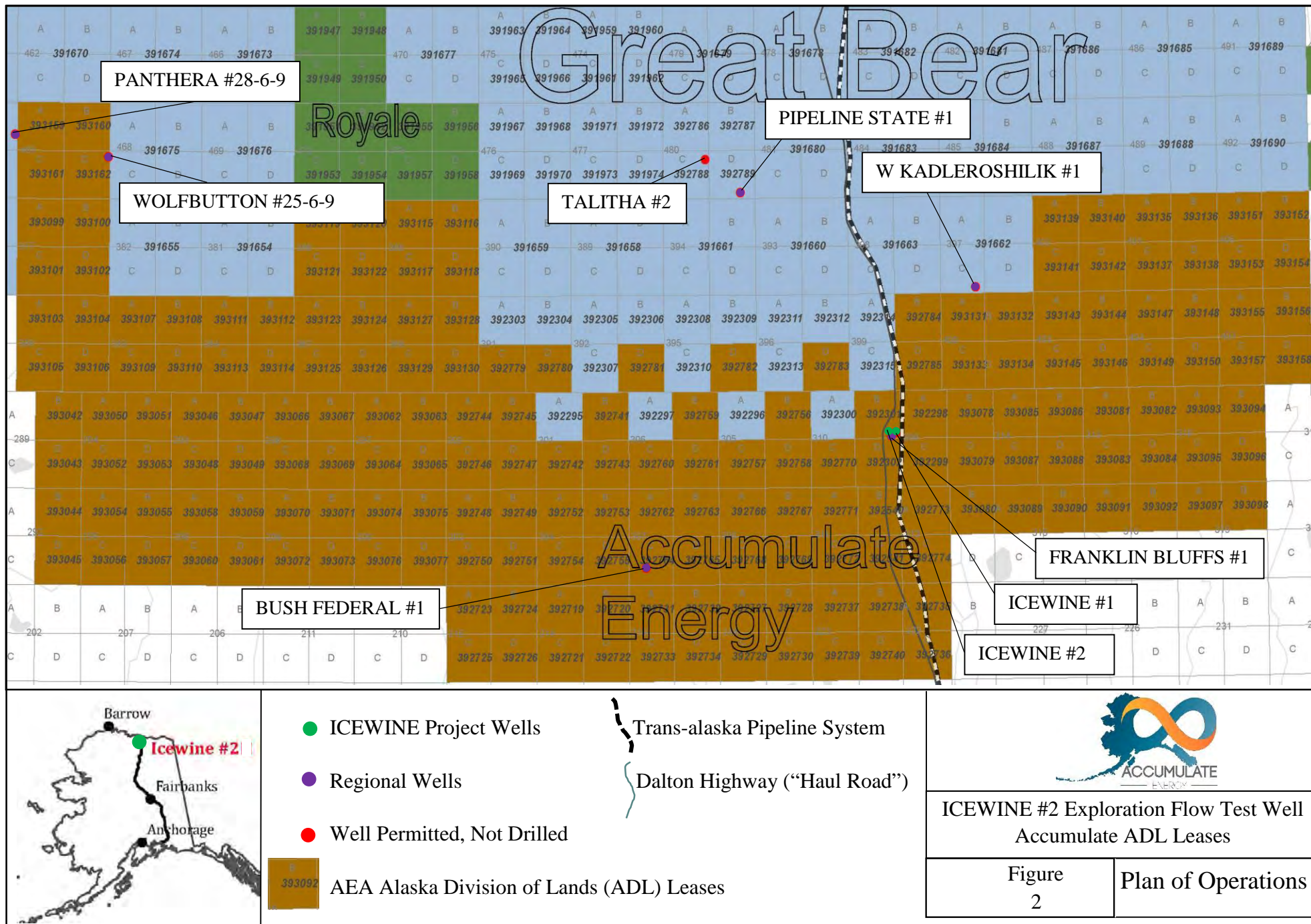
Accumulate Lease Block courtesy of Mapmakers Alaska

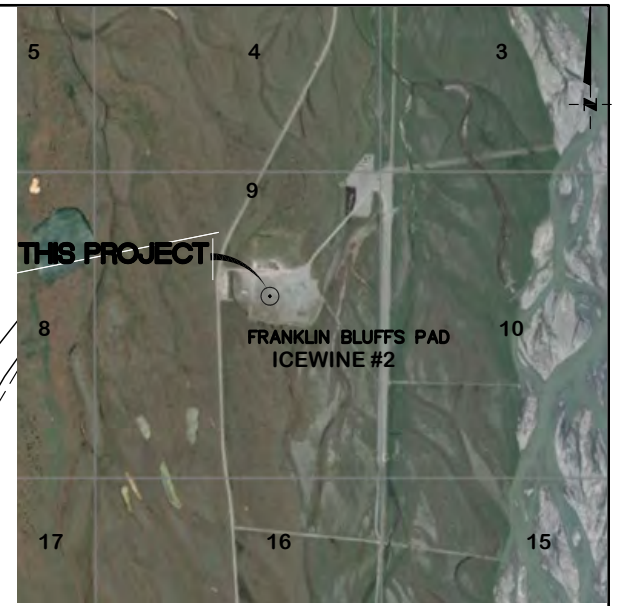


ICEWINE #2
Exploration Flow Test Well
Project Overview

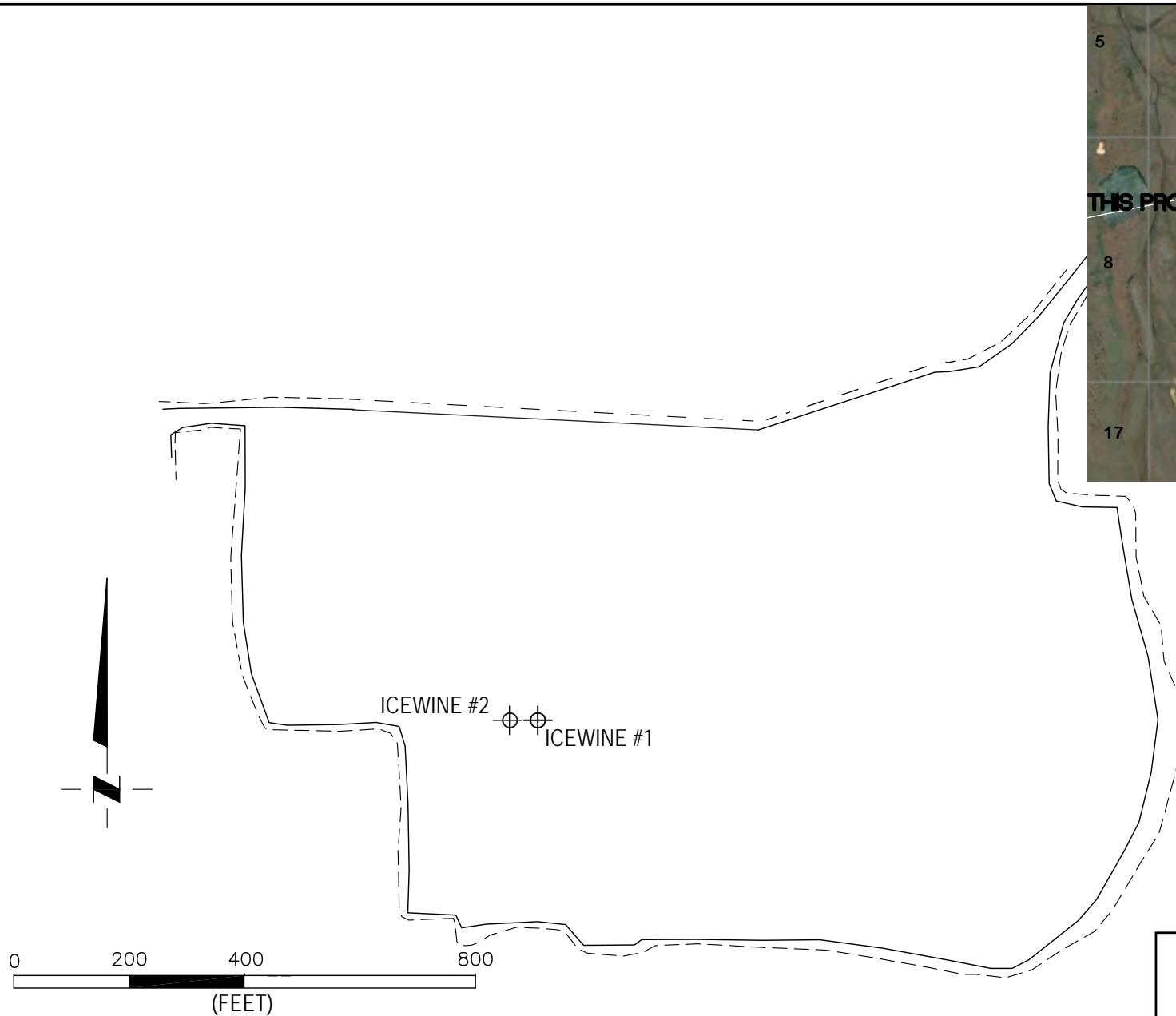
Figure:
1

Plan of Operations





VICINITY MAP
NTS



LOCATED WITHIN SEC. 9, T. 4 N., R. 14 E., UMIAT MERIDIAN, ALASKA

WELL NO.	A.S.P. NAD27 COORDINATES	NAD27 GEODETIC POSITION(DMS)	NAD27 GEODETIC POSITION(D.DD)	A.S.P. NAD83 COORDINATES	NAD83 GEODETIC POSITION(DMS)	NAD83 GEODETIC POSITION(D.DD)	PAD ELEV	SECTION OFFSETS
ICEWINE#1 (AS DRILLED)	Y=5,747,747.04 X= 664,697.09	69°43'02.033" 148°42'10.104"	69.7172314° 148.7028067°	Y= 5,747,494.19 X= 1,804,734.89	69°43'00.913" 148°42'20.712"	69.7169202° 148.7057534°	356'	2,245' FNL 2,120' FEL
ICEWINE #2 (AS PLOTTED)	Y=5,747,745.98 X= 664,647.10	69°4 '02.033" 148°42'10.140"	69.7172313° 148.7028066°	Y= 5,747,497.13 X= 1,804.722.03	69°43'00.944" 148°42'21.075"	69.716929° 148.7058542°		2,245' FNL 2,170' FEL

DWG.BASED ON FRB15 ACE 01

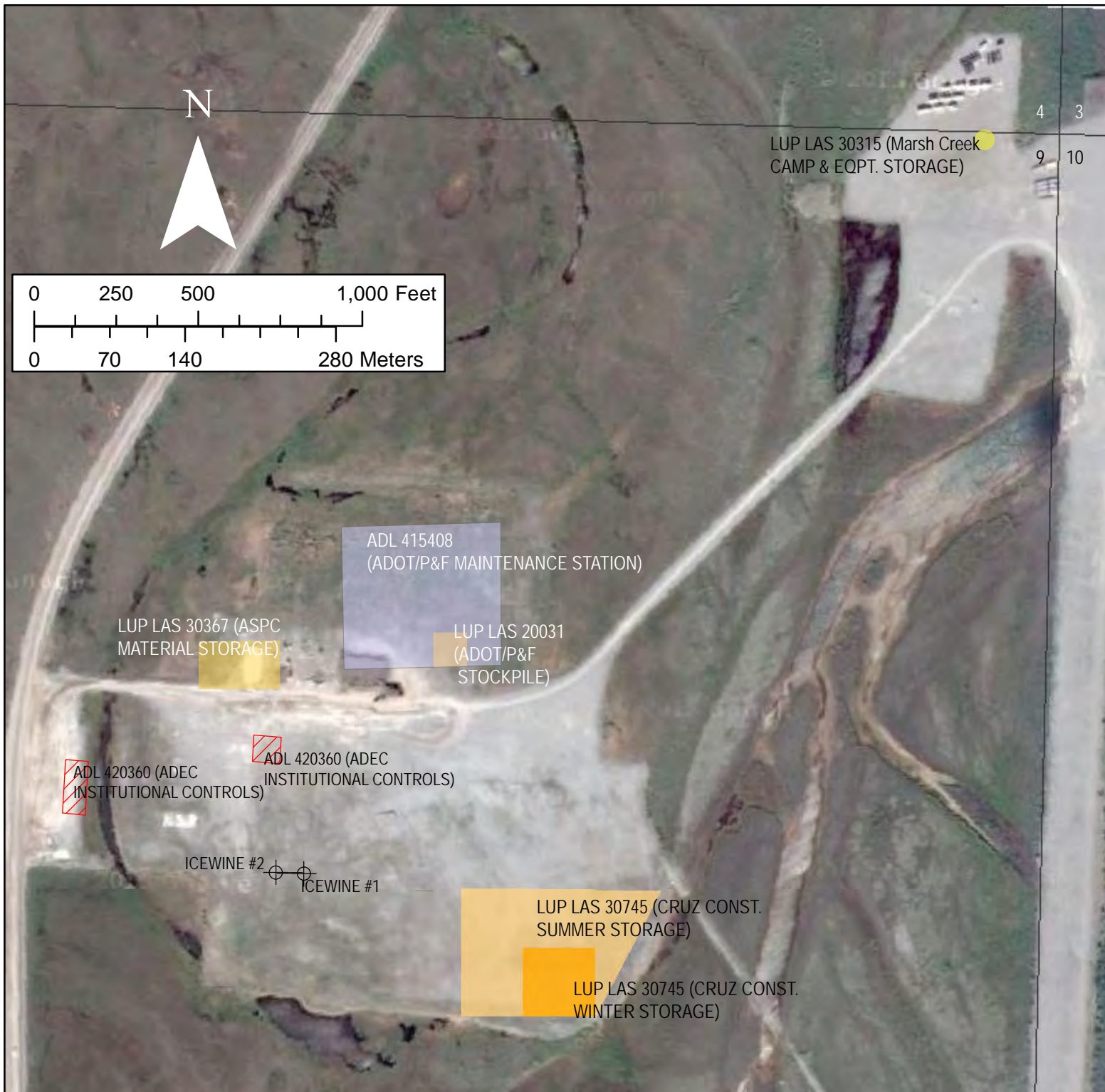


FRANKLIN BLUFFS AS-PLOTTED

**ICEWINE #2 EXPLORATION
FLOW TEST WELL**

**FIGURE
3**

PLAN of OPERATIONS



This land is managed by the State, acquired under General Grant GS 1669 and patented on March 27, 1974 under patent number 50-74-0096, with standard reservations.

Township 04N/Range 014E Umiat Meridian, Section 9 and Surrounding Area

ADL, surface ownership, ROW & easement agreements NOT SHOWN in Figure 3a include the following.

- ADL 63574 granted to Alyeska Pipeline Service Company (ASPC) for the Trans-alaska Pipeline System (TAPS) ROW
- ADL 403068, 414572 & 414573 granted to ASPC for private easements to access the TAPS
- ADL 63826 granted to ADOT/P&F for the Dalton Highway ROW
- ADL 414835 granted to North Slope Borough for Municipal Entitlement Land under AS 29.65.01
- ADL418897 granted to Alaska Gasline Development Corp. for Alaska Stand Alone Pipeline ROW

Franklin Bluffs Pad

Ongoing surface activities on the Franklin Bluffs gravel pad NOT SHOWN in Figure 3a include the following.

- LUP LAS 29344 granted to Great Bear Petroleum Operating LLC for general use of off-road travel
- LUP LAS 29960 granted to Robinson Brothers Construction for materials storage (Note ADNRLand Abstract indicates this permit expires on 30 June 2016)
- LUP LAS 30135 granted to SAEExploration for a temporary camp and equipment/material storage
- LUP LAS 30889 applied for by Carllie Enterprises for storage of material and equipment

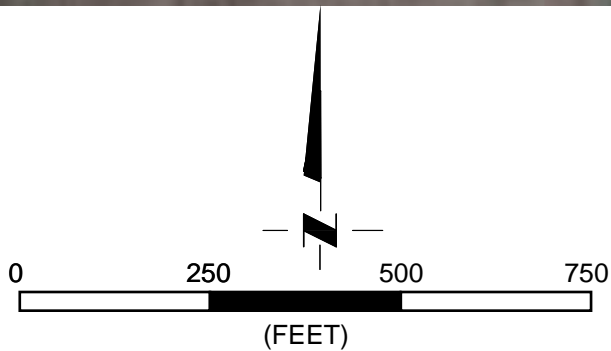
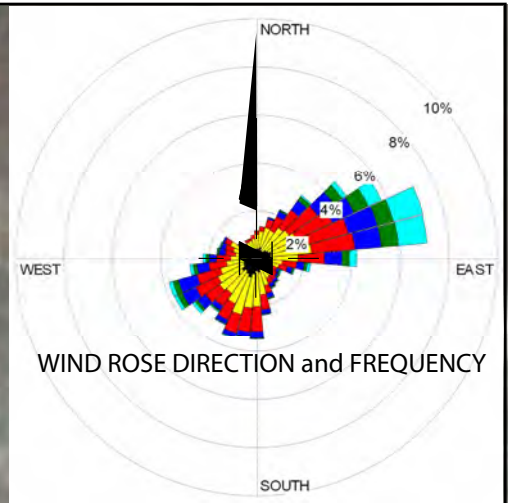


ICEWINE #2 EXPLORATION FLOW TEST WELL

LAND ESTATE INFORMATION SUMMARY

Figure:
3a

PLAN of OPERATIONS



ICEWINE #2 Exploration Flow Test Well
Overall Site Operations Locations & Surrounding Land Estate

Figure:
4

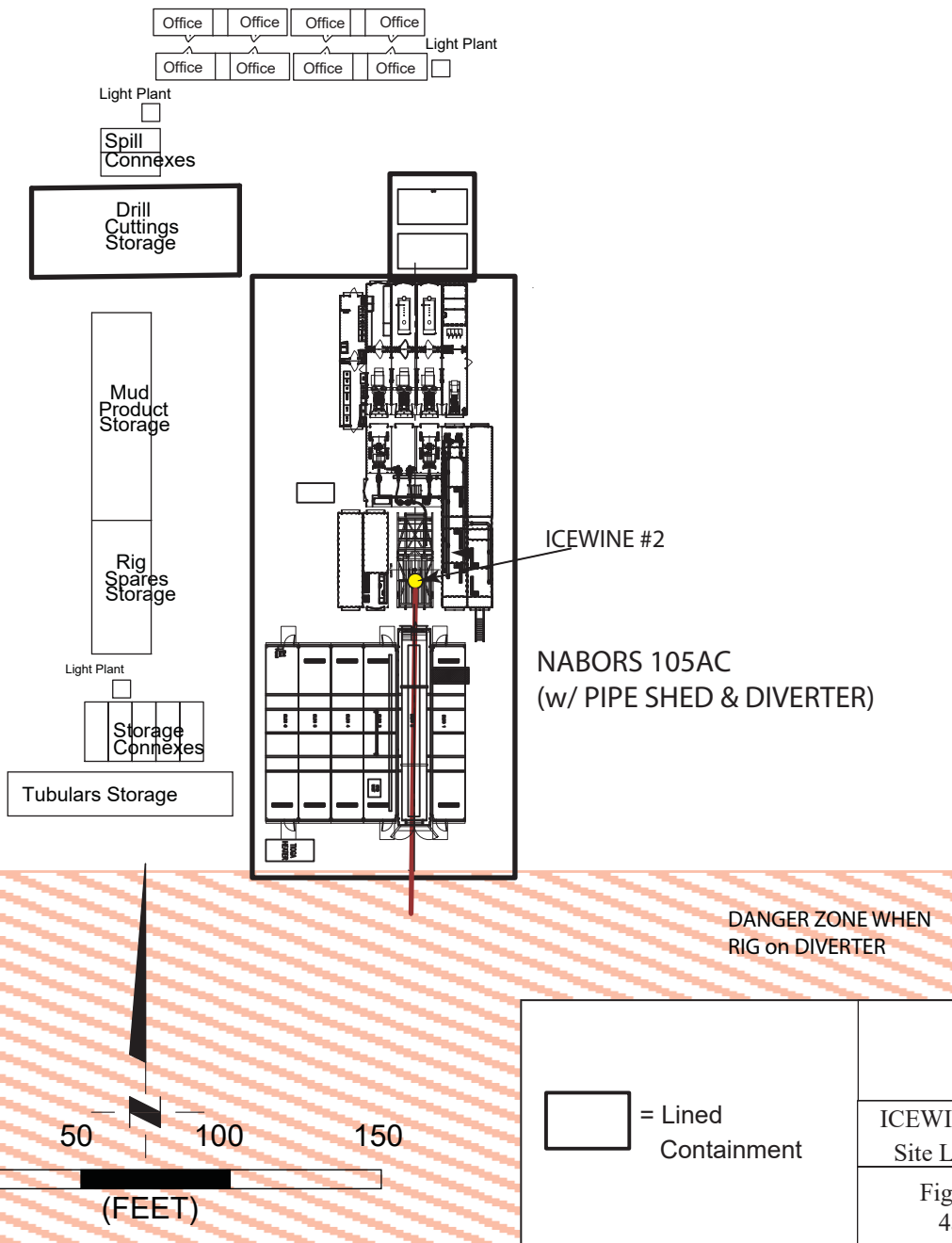
PLAN of OPERATIONS

72 Man Camp

Potable Water &
Wastewater Treatment



VICINITY MAP
NTS



ICEWINE #2 Exploration Flow Test Well
Site Layout (Proposed) During Drilling

Figure
4a

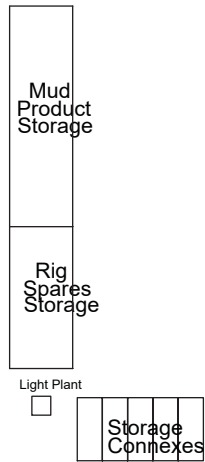
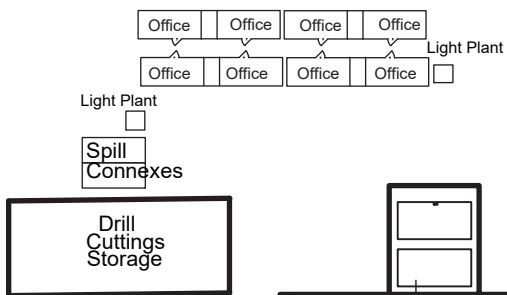
Plan of Operations

72 Man Camp

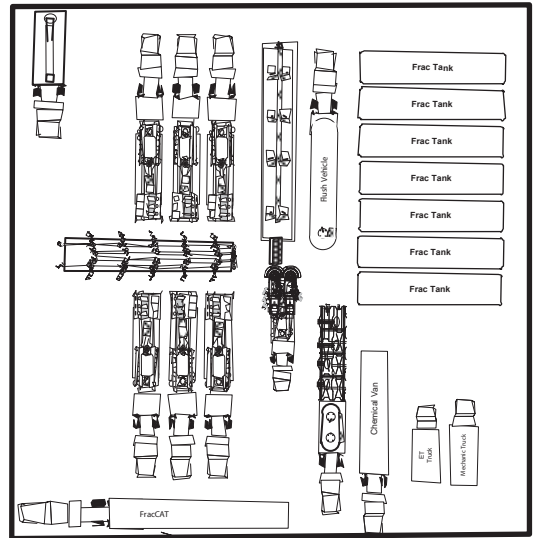
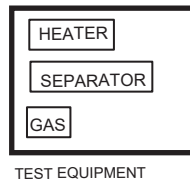
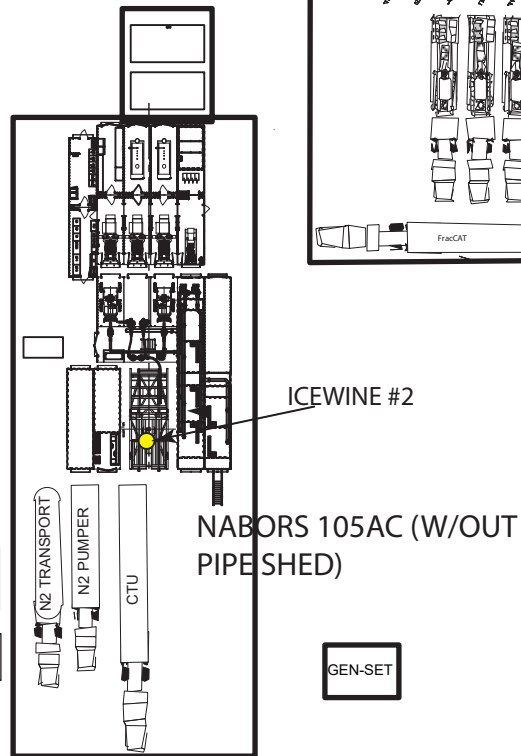
Potable Water &
Wastewater Treatment



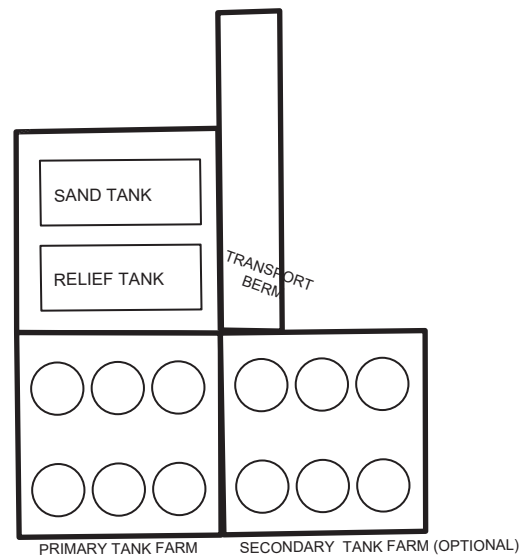
VICINITY MAP
NTS



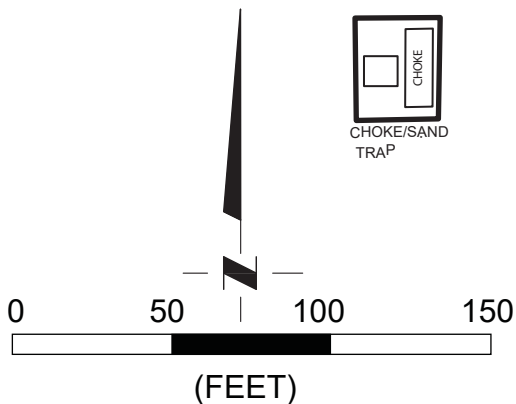
Tubulars Storage



STIMULATION SPREAD



FLOW TEST SPREAD



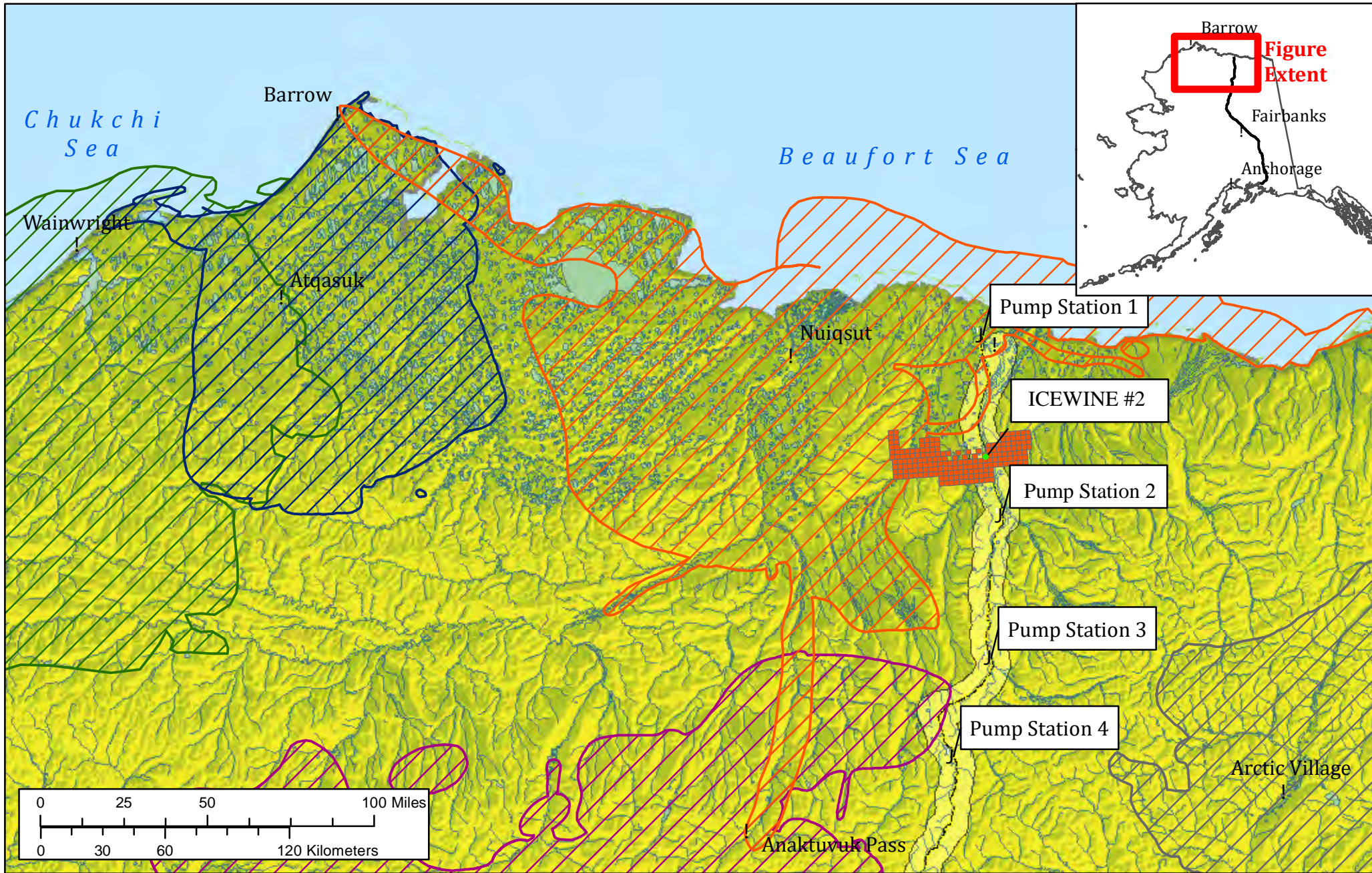
= Lined
Containment



ICEWINE #2 Exploration Flow Test Well
Well Site Layout (Proposed) During Flow Test

Figure
4b

Plan of Operations



- ICEWINE #2
- ! Villages
- Lakes, Rivers and Streams
- TAPS
- J Pump Stations
- Dalton Highway
- Dalton Highway Corridor
- Wainwright Subsistence Use Area
- Anaktuvuk Pass Subsistence Use Area
- Arctic Village Subsistence Use Area
- Atqasuk Subsistence Use Area
- Nuiqsut Subsistence Use Area



ICEWINE #2 Exploration Flow Test Well
Subsistence Use Areas

Figure:
5

Plan of Operation

Appendix B: Agency and Public Comments

State Pipeline Coordinators Section, October 4, 2016

The SPSC issued Land Use Permit (LAS 30367) to Alyeska Pipeline Service Company (APSC) on February 5, 2016 to store materials and equipment adjacent to the TAPS right-of-way. LAS 30367 is correctly depicted on Figure 3a as the rectangle on the north side of the traffic lane. It is also depicted as a yellow dot south of the traffic lane. That dot and the label are depicted in error. That was the location of a stockpile of riprap after the Sag River flooding two winters ago. The DMLW NRO asked that the stockpile be moved because it was in the way. Before Alyeska could get to it, DOT moved the stockpile to its current location. The storage of equipment and materials permitted under LAS 30367 will not interfere with AEA's project to drill IW-2. The implementation of the Collision Avoidance Protocols called for in the Plan will greatly reduce the possibility of vehicles striking each other near the man camp.

Division Response:

Map error corrected, comments noted and forwarded to Applicant.

State Pipeline Coordinators Section, October 20, 2016

The additional Oil& Gas Leases are all issued to AEA. The ASAP right-of-way is not affected by this well drilling because it is on the FBP. Alyeska's storage permit lies within the boundaries of the ADOTPF storage area, and Alyeska's access across FBP to the TAPS pipeline right-of-way will not be impeded by this well and the associated man camp. The State Pipeline Coordinator's Section has no concerns with this application.

Division Response:

Comments noted.

ADFG, Division of Habitat, October 6, 2016

The ADF&G has no objection to the proposed lease plan of operations submitted by Accumulate Energy Alaska Inc. for its proposed Icewine-2 exploration well at FBP. The ADF&G previously issued AEA fish habitat permits for water withdrawal from two fish-bearing waterbodies that are still in effect.

Division Response:

Comment noted.

Alaska DNR, Division of Mining, Land and Water, October 12, 2016

(1). The DNR DMLW NRO has reviewed the Accumulate Icewine-2 project. The DMLW recommends that the applicant visibly mark the southwest and south edges of the pad to help vehicles avoid entering the tundra.

(2). In regards to the 'Public Use Areas' (Section X of application), the gravel pad is actively used by the public to base hunting and other recreational activities from. Pad use and vehicle

access shall remain open to the public, unless emergency conditions dictate temporary closure. There are several ongoing DMLW-authorized activities on the gravel pad, as accurately depicted in figures 3 and 4 of the application. DMLW requests that the applicant and DOG work with DMLW in the event that these surface uses conflict (or potentially conflict) with the drilling activity.

(3). We would like to note that Accumulate left a modular structure on pad past the DOG authorized winter drilling season and thru the 2016 summer season. As noted by Accumulate, this is a multi-use state-owned gravel pad. We request that DOG emphasize the need for all materials to be removed or appropriately stored from the site at the end of an authorization period or between the current phase and the potential 2018 phase III. In the event that Accumulate requests to store materials while not operating, they should work with the DNR – either DOG or DMLW – to minimize the storage footprint.

(4). Mitigation measure A.2.b. notes that water withdrawals are expected to occur from approximately 5 water sources. I did not find info noting if off-road travel would be necessary for accessing these water bodies. If off-road travel to access water sources (or for any other reasons) is required, Accumulate or 3rd party working on their behalf should contact the DMLW NRO office.

Division Response:

Comment noted and forwarded to the applicant.

Applicant Response:

(1). The IW-2 drill site, within the greater FBP, is located in the western half and is designated as a “secure worksite” with appropriate signage and on-going monitoring by AEA and contractor personnel to prevent unauthorized public access and to maintain site safety. When the rig is drilling “on-diverter” the southern and southwestern portion of the IW-2 drill site is secured with “safety and staged equipment barriers and flagging” to maintain the exclusion zone, as depicted on Figure 4. Additionally, under normal operations, the perimeter of the IW-2 drill site is used for ancillary equipment, supplies and OCTG tubular storage, with snow-push piles located at the pad edge. These standard operating practices are usually sufficient to prevent drill site contractor equipment and vehicles from travelling off the FBP edge into the adjacent tundra areas.

(2). AEA will work with both DMLW and DOG should other FBP surface users conflict with ongoing IW-2 drill site operation. Public access to the FBP is not restricted by AEA IW-2 drilling operations as shown on Figure 4.

(3). AEA may elect to stage ancillary drilling and response equipment on the IW-2 drill site between the 2017 and 2018 phased exploration activities. AEA will work with both DOG and DMLW to confirm the storage location and minimize the storage footprint.

(4). The 5 potential water sources are flooded material sites with gravel road access. The TWUA application is underway. No off-road travel is expected. Access to the APSC water source sites will be coordinated with APSC through a Letter of Non-Objection (LNO) and water withdrawal quantities will be coordinated with other TWUA permittees.

Alyeska Pipeline Service Company, November 21, 2016

The AEA application states that a letter of non-objection (LNO) will be requested of Alyeska for any TAPS rights-of way access, including adjacent to the former Franklin Bluffs Camp airstrip. We have not received such a request. Last year, Alyeska's non-objection was issued in August for use of four access roads via water tankers.

Division Response:

Comment noted and forwarded to the applicant.

Applicant Response:

TWUA application for the two water sources that require the APSC LNO has been submitted. AEA is waiting for the official TWUA permit number before requesting the LNO from APSC.