ConocoPhillips Alaska

Sarah Kenshalo
Environmental Coordinator
700 G Street, ATO 1956
P.O. Box 100360
Anchorage, Alaska 99510-0360
Phone 907.265.1550
Email: Sarah.M.Kenshalo@concophillips.com

Hand Delivered

November 2, 2017

Division of Oil and Gas Permitting
Alaska Department of Natural Resources
Division of Oil and Gas
550 West 7th Ave., Suite 1100
Anchorage, AK 99501-3510

Re: Unit Plan of Operation Application
2017/2018 Putu 2 Exploration Drilling Program
Colville River Unit

Dear Regulator:

ConocoPhillips Alaska, Inc. (CPAI) request authorization to conduct a 2017/2018 Putu 2 Exploration Drilling Program in the southern portion of the Colville River Unit on the North Slope, Alaska.

CPAI has identified one drilling location; named Putu 2, along with one sidetrack (Putu 2A) for the 2017/2018 Putu 2 Exploration Drilling Program. The Putu 2 well is being planned for a directional target (Putu 2 well) followed by a vertical sidetrack (sidetrack; Putu 2A) from the same surface location. Each well (the initial well and the sidetrack) targets a separate prospect.

The Exploration Program is scheduled to begin on January 15, 2018 and be completed by April 30, 2018, however the timing of the program is dependent upon field conditions including tundra opening. Access ice roads and ice pads will be constructed to provided support and infrastructure to the drilling program. The final ice road is dependent upon site-specific circumstances and only those vehicles approved for winter travel will be utilized during winter tundra travel and pre-packing.

Attached is the Unit Plan of Operation Application, Mitigation Measures, maps, and a check made payable to the State of Alaska, DNR, DOG in the amount of $250.00 for the permit application filing fee.

If you have any questions or need additional information, please contact me at (907) 265-1550.

Sincerely,

Sarah Kenshalo
Environmental Coordinator

Attachments

UNIT PLAN OF OPERATIONS APPLICATION

State of Alaska
Department of Natural Resources, Division of Oil & Gas
550 W. 7th Ave, Suite 1100, Anchorage, AK 99501-3563
Phone: 907-269-8800 Fax: 907-269-8943
Permitting Email: dog.permitting@alaska.gov

SECTION I: APPLICANT INFORMATION

1. Applicant:

Name: ConocoPhillips Alaska, Inc. (CPAI)

Mailing Address: P.O. Box 100360

City: Anchorage

State: Alaska Zip Code: 99510-0360

Phone: 907-265-1550 Fax: 907-265-6216

Email: Sarah.M.Kenshalo@conocophillips.com

2. Applicant Contact:

First Name: Sarah Last Name: Kenshalo

Title: Permitting Coordinator

Is the Mailing Address the same as Applicant's Mailing Address? If "No", please provide information below: ☒ Yes

Mailing Address: Enter Mailing Address.

City: Enter City. State: Enter State. Zip Code: Enter Zip Code.

Phone: Enter Phone. Fax: Enter Fax.

Email: Enter Email.

3. Unit Name

Colville River Unit

4. Unit Operator Contact:

Is The Unit Operator Contact the same as the Applicant Contact? If "No", please provide information below: ☒ Yes

First Name: Enter First Name. Last Name: Enter Last Name. Title: Enter Title.

Mailing Address: Enter Mailing Address.

City: Enter City. State: Enter State. Zip Code: Enter Zip Code.

Phone: Enter Phone. Fax: Enter Fax. Email: Enter Email.

Describe the relationship between the Unit Operator and the Applicant:

Click here to enter text.

SECTION II: THIRD PARTY INFORMATION

(Fill out this section only if you are applying for the Applicant)

Third Party Company Name: N/A

First Name: N/A Last Name: N/A

Title: N/A

Mailing Address: N/A

City: N/A

State: N/A Zip Code: N/A

Phone: N/A Fax: N/A

Email: N/A

Describe the affiliation to the Applicant:

N/A

SECTION III: APPLICATION DATE AND NUMBER

(FOR OFFICE USE ONLY)

Application Date:

Application Number:

SECTION IV: PROJECT INFORMATION

1. Project Name:	2017/2018 Putu 2 Exploration Drilling Program
2. Proposed Start Date:	1/15/2018

3. Project Description:

Is activity discussed in the approved Plan of Development on file with the Division's Units Section? ☒ Yes ☐ No

Describe what and where:

ConocoPhillips Alaska, Inc. (CPAI) requests authorization to conduct a 2017/2018 Putu 2 Exploration Drilling Program (one well and one sidetrack from the same surface location) located in the southern portion of the Colville River Unit on the North Slope, Alaska. The surface location of the Putu 2 exploration program is owned by the Kuukpik Corporation. CPAI has a surface use agreement with Kuukpik Corporation and will be working with them closely for this exploration program. The subsurface is jointly owned by the state of Alaska and Arctic Slope Regional Corporation (ASRC). The 2017/2018 Putu 2 Exploration Program will begin in mid January 2018 and be completed by April 30, 2018 however the exact timing of the program is dependent upon field conditions including tundra opening. Due to the proximity of this well to the village of Nuiqsut, the rig will be powered by six Tier 4 diesel generators (Tier 4 generator set) located ~1.0 miles north of the well location. The primary Tier 4 generator set will be set on a 200-feet by 200-feet (or equivalent acreage) ice pad and a 13.8 kilovolts (kV) power cable line will run to the rig (located at the generator ice pad) for electric power at the rig.

SECTION V: LAND STATUS

1. State Mineral Estate:

Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No

Affected ADL: 390674 Date Effective: 6/29/2016 Date Assigned: 5/12/2016

Oil And Gas Lessee(s): CPAI

Surface Ownership: Kuukpik Corporation

Do you have, or anticipate having an Access Agreement: ☒ Yes ☐ No

Special Use Lands: None Identified

Jointly Managed Lands: ASRC Jointly Managed Subsurface Lands

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Putu 2 Well/2A	Umiat, T10N, R5E, Section 9	70.233233, 150.874483
~0.4 mile Ice Road	Umiat, T10N, R5E, Section 9	Various
Vertical Seismic Profile (VSP)	Umiat, T10N, R5E, Section 9	Various

Affected ADL: 390674 Date Effective: 6/29/2017 Date Assigned: 5/12/2016

Oil And Gas Lessee(s): CPAI

Surface Ownership: Kuukpik Corporation

Do you have, or anticipate having an Access Agreement: ☒ Yes ☐ No

Special Use Lands: None Identified

Jointly Managed Lands: ASRC Jointly Manged Subsurface Lands

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Electrical Cable Support Ice Pad 1	Umiat, T10N, R5E, Section 9	70.2418037, 150.8783269
Electrical Cable Support Ice Pad 2	Umiat, T10N, R5E, Section 9	70.23674065, 150.8788102
~1 mile 13.8 kV Power Cable Line	Umiat, T10N, R5E, Section 9	Various

Affected ADL: 393167 Date Effective: 1/6/2017 Date Assigned: Unknown

Oil And Gas Lessee(s): Armstrong Energy

Surface Ownership: Kuukpik Corporation

Do you have, or anticipate having an Access Agreement: ☐ Yes ☒ No

Special Use Lands: Obtain a letter of non-objection from Oil and Gas Lessee

Jointly Managed Lands: ASRC Jointly Managed Subsurface Lands

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
~1 mile 13.8 kV Power Cable Line	Umiat, T10N, R5E, Section 4	Various
Generator Ice Pad	Umiat, T10N, R5E, Section 4	70.24748594, 150.8818586
Short Access Ice Road (120-feet)	Umiat, T10N, R5E, Section 4	Various

Affected ADL: 391915 Date Effective: 8/1/2005 Date Assigned: 6/1/2016

Oil And Gas Lessee(s): CPAI

Surface Ownership: Kuukpik Corporation

Do you have, or anticipate having an Access Agreement: ☒ Yes ☐ No

Special Use Lands: None Identified

Jointly Managed Lands: ASRC Jointly Managed Subsurface Lands

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Vertical Seismic Profile (VSP)	Umiat, T10N, R5E, Section 8	Various
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL. Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement: ☐ Yes ☐ No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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2. State of Alaska Surface Lands:

Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates

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Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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3. Private Lands:

Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No

Oil And Gas Mineral Estate Owner: Click here to enter text.

Surface Ownership And Access Agreement(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Surface Ownership And Access Agreement(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Surface Ownership And Access Agreement(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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SECTION VI: BOND INFORMATION

Bonded Company: ConocoPhillips Alaska, Inc.

Type:	Land Use Performance Guaranty	Number:	6475568	Amount:	Statewide Oil & Gas Bond $1,000,000

Bonding Company: Safeco Insurance Company of America

Mailing Address: 2055 Sugarloaf Circle

City: Duluth State: GA Zip Code: 30097

Phone: 678-417-3841 Fax: 866-547-9909 Email: Lisa.Brissey@LibertyMutual.com

SECTION VII: SEQUENCE AND SCHEDULE OF OPERATIONS

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1.	Drilling	1/15/2018	3/15/2018
2.	Well Testing	3/15/2018	4/15/2018
3.	Completion and Demobilization	4/15/2018	4/25/2018
4.	Enter Milestone.	Enter Date.	Enter Date.
5.	Enter Milestone.	Enter Date.	Enter Date.
6.	Enter Milestone.	Enter Date.	Enter Date.
7.	Enter Milestone.	Enter Date.	Enter Date.
8.	Enter Milestone.	Enter Date.	Enter Date.
9.	Enter Milestone.	Enter Date.	Enter Date.
10.	Enter Milestone.	Enter Date.	Enter Date.

SECTION VIII: PROJECTED USE REQUIREMENTS

1. Describe the proposed operations, including the location and design, of **Well Sites**:

The drilling location activities are proposed in the southern portion of the Colville River Unit. See attached map named 2017/2018 Putu 2 Exploration Project, Project Overview map (Appendix A). CPAI has identified one surface drilling location for the 2017/2018 Putu 2 Exploration Drilling Program; named Putu 2. A planned layout of the drill site is shown in Appendix A. The Putu 2 well is being planned for a directional target (Putu 2 well) followed by one vertical sidetrack target (Putu 2A) from the same surface location. The planned well bore design will be similar to those employed in North Slope exploratory wells. The actual well bore design is submitted as part of the Drilling Permit issued by the Alaska Oil and Gas Conservation Commission (AOGCC). Each well (the initial well and the sidetrack) targets a separate prospect. CPAI plans to start drilling on approximately January 15, 2018. Drilling activities conducted at Putu 2 will be conducted using a single drill rig, Kuukpik 5. This rig is suitable for arctic operations. The Putu 2 well and the Putu 2A sidetrack well will provide additional reservoir information in the area and narrow uncertainty around reservoir description parameters including oil-water contact, sand quality and thickness, and oil viscosity. The drilling operations will occur from the Putu 2 drilling ice pad with approximate maximum dimensions of 800 feet x 800 feet (or equivalent acreage). The drilling ice pad will be situated so that the pad edge is no closer than 100 feet from the shoreline of any nearby water bodies.

2. Describe the proposed operations, including the location and design, of **Buildings**:

A temporary man camp (Stallion Camp RC34) will be located at the Putu 2 drilling ice pad to support personnel. The man camp has the capability of accommodating ~65 people and will be powered by the primary Tier 4 diesel generator set (located at the generator ice pad ~1 mile north of the drilling ice pad) which will produce electricity to power the man camp. The man camp will be equipped with a back-up emergency diesel generator in case the primary Tier 4 diesel generator set loses power. The back-up diesel generator will only be utilized in case of an emergency (e.g. power outage, equipment malfunction, etc.). The drilling ice pad will also include the following support facilities: a satellite office camp, storage areas; (e.g., fuel storage, drilling waste storage) and maintenance buildings.

3. Describe the proposed operations, including the location and design, of **Fuel and Hazardous Substances**:

Fuel storage capacity totaling approximatley 64,532 gallons (drilling ice pad ~28,900-gallons (primarily for emergency backup power generation) and generator ice pad ~35,632-gallons) is expected to be required to support the drilling program. Fuel will be stored in multiple fuel containers and placed in lined bermed fuel storage areas. The Stallion camp, located at the drilling ice pad, will be equipped with a primary and a back-up diesel fuel tank (400-gallon & 1,000-gallon tanks) to power the back-up emergency diesel generator. The Kuukpik 5 drill rig will be equipped with a 7,500-gallon diesel fuel tank to power the rig's back-up emergency diesel generator in case the primary Tier 4 generator set loses power. There will be two 10,000-gallon diesel fuel tanks at the drilling ice pad to be used as backup fuel for the rig and for other auxiliary equipment. The primary Tier 4 diesel generator set will require up to 3,732-gallons of diesel which will be stored at the generator ice pad. The drilling contractor holds a SPCC plan for their fuel storage facilities associated with drilling operations. All fueling and transfer operations will be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPAI-005) and liners will be used as required by the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). The project will also require four 400 bbl crude

storage tanks for well testing and six 500 bbl secondary tanks for an estimated total capacity of 4600 bbl. The crude storage tanks catch the crude during flow testing and the tanks do not store or contain the fuel. The crude storage tanks will be located at the Putu 2 drilling ice pad during well testing and are part of the well testing fleet. Oil Discharge Prevention and Contingency Plan- An approved oil discharge prevention and contingency plan (ODPCP) will be kept on site at all times for use in controlling and cleaning up any accidental discharges of fuels, lubricants, or produced fluids. The ODPCP has been reviewed and the project is consistent with the approved plan. An information package for the Putu drilling program is being submitted to the Alaska Department of Environmental Conservation.

4. Describe the proposed operations, including the location and design, of Solid Waste Sites:

Non-Drilling Wastes - Solid, non-burnable waste will be deposited in large dumpsters at the project site. These containers will be back-hauled to the NSB landfill at Prudhoe Bay. Food waste that could attract wildlife will either be stored in enclosed conex containers, awaiting periodic hauling, or such waste will be placed in a secured wildlife proof container while waiting for pickup.Camp wastewater will be hauled primarily to the Kuparuk Operations Center wastewater treatment facility. Alternatively, the wastewater treatment facility at Alpine may be periodically used. Wastewater will not be directly discharged by the camp. The rig camp could generate about 5,000 gpd of domestic wastewater. The testing camp could generate about 5,000 gpd of wastewater. Disposal of Drilling Waste - Excess drilling muds and drill cuttings will be disposed by of injection into an approved Class II well at Kuparuk or through the grind and inject facility (Drill Site 4) at Prudhoe Bay. Prior to hauling, the cuttings and liquids will be temporarily stored in cutting boxes inside ice bermed storage cells. Ice-Bermed Storage Cell - The cuttings and liquids will be stored in cutting boxes in one ice-bermed drilling waste storage cell on the ice pad. In Appendix C shows a typical drill cuttings storage area and photos of the bins. It is anticipated that up to 15,000 cubic feet of cuttings could be generated drilling the well. The cell dimensions will be as approximately 100 feet x 150 feet x 3 feet high, giving a gross volume of 45,000 cubic feet. The State of Alaska Department of Environmental Conservation has a requirement for 2 feet of free board, therefore the usable storage volume is one third the gross (or 15,000 cubic feet). The storage cell may be constructed with different dimensions as long as there is 2 feet of freeboard above the cuttings and as long as it conforms to the Alaska Department of Environmental Conservation Temporary Storage of Drilling Waste in Ice Cells requirements. The volume of waste placed in the storage cell will be minimized as will snow accumulation in the cell. Upon completion of the activities at the well site, the ice-bermed drilling waste storage cell will be broken up and hauled to Kuparuk or Prudhoe Bay for disposal in an approved Class II injection well.

5. Describe the proposed operations, including the location and design, of Water Supplies:

Water sources will be permitted with CPAI's Alpine Resupply Road. Water from Lake B8530, M9607, and ASRC Mine Site will also support this project. The water sources will be used for the construction and maintenance of the ice roads and ice pads. An ice road approximately 0.4-miles in length will be constructed from the Alpine Resupply ice road to the Putu 2 ice pad. To access the generator ice pad, a short access ice road (~120 foot long) will be constructed from the Alpine Resupply Ice Road. Approximately 1 mile of ice road can be constructed per day and the fresh water requirement for ice road construction is approximately 1,000,000 gallons per mile of ice road; therefore, the Putu 2 ice road will utilize approximately 400,000 gallons of water. Construction of the ice pads will require approximately 2,000,000 gallons of water per day for a total of 2,750,000 gallons of water. The total water requirement for the construction of the ice roads and ice pads is approximatley 3,900,000 gallons of water. The icing in of the ~1.0 mile power cable will utilize another approximatley 1,000,000 gallons. It will take approximately 14 days to construct the ice roads and ice pads. The ice pads and ice roads may be scarified with equipment to reduce slickness for safety purposes. Fresh water is also needed for drilling operations and camp use. Approximately (up to) 20,000 gallons per day (gpd) of water will be required for drilling operations and the camps will need about 5,000 gpd of fresh water. This is a total of approximately 25,000 gpd of fresh water for drilling and camp needs while drilling operations are underway. Approximately 40,000 gallons of water per day will be required to maintain each mile of ice road during the winter season. The total estimate water needs including construction of ice roads and ice pads and operations is approximatley 10,700,000 gallons of water for this project. The drilling operation is expected to take approximately 95 days from beginning of drilling to completion of the plug and abandonment. Water and ice chips will be obtained from permitted sources (Alpine Resupply). The spur roads off of the Alpine Resupply Road to access Lake B8530 and Lake M9607 are also permitted with the Alpine Resupply road. Snow cover will be removed from all sources approved for water withdrawal and/or ice mining. The purpose of snow removal is to provide access for water trucks and ice chippers, installation of temporary water houses, and truck turnaround areas. Additional snow may be removed from any non fish-bearing lakes and lakes less than 7 feet deep for the purpose of ice road and pad construction. Additional snow removal from fish-bearing lakes, beyond the minimal amount required for vehicle access and water/ice withdrawal, must be approved by the Alaska Department of Fish and Game on a case by case basis.Water may be hauled from additional approved sources but will not be taken from any rivers. Water for construction and drilling will be pumped from the sources and transported by tank trucks. Water for human use will be hauled from the Kuparuk Operations Center (KOC) water treatment facility. Wastewater from the camps will be hauled to the KOC wastewater treatment facility for disposal. The Alpine Operations facility may provide potable water and wastewater disposal if capacity allows it. Light plants will be placed on frozen lakes at the water houses and on access roads for safety purposes. The light plants will be refueled on the frozen lakes following CPAI's standard procedures for fuel transfers. All light plants have 110% spill containment. Signs will be placed at lake access points to identify each permitted source being actively used. All water intakes on fish-bearing lakes will have screens at the intake points to prevent entrapment of fish. Screen design will comply with Alaska Department of Fish and Game requirements. Water Withdrawal - Water withdrawal required for construction of the ice road, ice pads, drilling activities, and for portable water use will be authorized under already permitted Temporary Water Use Authorization from Alaska Department of Natural Resources, Division of Mining, Land and Water (ADNR, DMLW). Water withdrawal from fish-bearing water bodies will be authorized under already permitted Fish Habitat Permits from Alaska Department of Fish and Game (ADF&G). Water sources expected to be used during the 2017/2018 exploration drilling program are as follows: Lake B8530 located in T10N, R5E, Section 4 and 5; Lake M9607 located in T10N, R5E, Section 4 and 9; ASRC Mine Site 2007 Pit located in T10N, R5E, Section 11. The Fish Habitat Permit and Temporary Water Use Authorization permit numbers are listed in Section VIII: Projected Use Requirements, number 11. The water sources described above are depicted on the map in Appendix A.

6. Describe the proposed operations, including the location and design, of Utilities:

Power will be supplied to the drill rig from a remote temporary Tier 4 diesel generator set. The Tier 4 diesel generator set will be placed on a 200-feet by 200-feet (or equivalent acreage) ice pad (generator ice pad) located ~1.0 mile north of the drilling ice pad. To connect the drilling ice pad to the primary Tier 4 diesel

generator set, a 13.8 kV power cable line will run from the Putu 2 ice pad to the generator ice pad. The power cable line will be encapsulated in ice approximately 25-feet wide and approximately 25-inches thick. Transporation vehicles will not utilize the ~1-mile ice encapsulated surface as it will not be an ice road; it will be solely to protect the power cable that is supplying power from the diesel generator set to the drill rig. Where the power cable line crosses under the Alpine Resupply Ice Road, the power cable line will be protected in an 8-inch diameter casing (~75 feet long). The protective casing will be encapsulated in ice approximately 30-inches thick. The exact location will need to be field verified, however a 'low point' along the Alpine Resupply ice road will be optimal. Two electrical cable support ice pads each approximately 100 feet by 100 feet (or equivalent acreage) will be constructed along the power cable ice encapsulation corridor to support the connection and maintenance of the 13.8 kV power cable line. The ice pads will be situated so that the pad edge is no closer than 100 feet from the shoreline of any nearby water bodies. There will be a communication tower attached to the drilling rig on the drilling ice pad approximately 25 feet tall. The communication system is self-contained with its own backup generator and light-plant. All communication towers are temporary and will be removed at demobilization. A lighting plan for the Putu 2 drilling ice pad will be developed to reduce lights visible from the village of Nuiqsut

7. Describe the proposed operations, including the location and design, of **Material Sites**:

No gravel will be utilized for this project.

8. Describe the proposed operations, including the location and design, of **Roads**:

Ice Roads and Pad Construction – There will be approximately a 0.4-mile ice road that will start at Alpine Resupply Road and proceed south to the Putu 2 well location. To access the generator ice pad, a short access ice road (~120 foot long) will be constructed from the Alpine Respply Ice Road. The proposed Putu 2 ice roads are depicted on the maps in Appendix A and is approximate. The Alpine Resupply ice road is permitted under multi-year permits, LAS 25360 and NSB 15-00F, but the Putu 2 access road and the access to the generator ice pad will be permitted separately for the Putu 2 project. The spur roads off of the Alpine Resupply Road to access Lake B8530 and Lake M9607 are also permitted with the Alpine Resupply road. Wheeled vehicles on the ice roads will be used to transport the drilling rig and supplies to and from the Putu 2 drilling ice pad. CPAI proposes to begin building the ice roads and ice pads to the well as soon as the necessary permits/approvals are issued by the authorizing agencies and tundra travel conditions are met. The ice roads will generally be 35 feet wide and minimum 6 inches thick. Rig mats or other similar items may be used during ice road construction or during equipment movement. Such devices will be removed prior to the end of the operating season. Ice pullout areas or widened sections of the ice road may be constructed at certain locations depending on field conditions. The ice pads will average approximately minimum 6 inches in thickness except under the drill rig where the thickness will be a minimum of 1 foot, and the cuttings storage area where the thickness will be 2 feet. Additional thickness may be required due to undulating terrain. This is depicted on the map in Appendix A.

9. Describe the proposed operations, including the location and design, of **Airstrips**:

No ice airstrips are required for the project.

10. Describe the proposed operations, including the location and design, of **All Other Facilities and Equipment**:

A list of typical equipment used to support drilling activities is provided in Appendix C. Equipment types will be typical of that used for North Slope oil and gas operations and will be obtained from existing North Slope contractors. Air Emissions - Sources of air emissions from the operation are from the Tier 4 diesel generator set (powering drilling rig), camp generator engines, steam generators, waste oil burners, hot air heater, light plants, incinerators, and well test flaring equipment. Air Quality Monitoring – Volatile Organic Chemical (VOC) sampling is not a requirement for any of CPAI's assets or operations, however CPAI is electing to take VOC samples during drilling and testing as a mitigation measure on scheduled intervals. Also, in the event of a gas release, and to expedite sampling, CPAI proposed placing extra VOC sampling canisters in Nuiqsut (in addition to the regularly scheduled VOC sample interval canisters) to be readily available for sampling. CPAI personnel would be trained to take the samples, if needed. Air Monitoring Stations – Two new mobile air monitoring stations will be utilized for the Putu 2 project. One temporary air monitoring station will be located on the generator ice pad and an additional air (and noise) monitoring station (sled-mounted, transported via tucker) will be placed at the northeast corner of the Nuiqsut City boundary. The two temporary air monitoring stations are in addition to the permanent CPAI Nuiqsut air monitoring station. The purpose of the air monitoring station is to collect air quality data during Putu 2 drilling. Measurement points will be established on: (i) the Nuiqsut side of the generator ice pad during drilling operations and the Nuiqsut side of the edge of the drilling ice pad once drilling operations are completed; (ii) on the edge of Nuiqsut at CPAI existing air monitoring station; and (iii) at a location on the municipal boundary of Nuiqsut between the generator ice pad and the City of Nuiqsut. Noise Monitoring Station – A noise monitoring station will also be implemented to monitor noise from the Putu 2 project. The temperature-sensitive noise monitoring equipment will be housed inside the air monitoring station. A hand buried (in snow) microphone cord will then extend ~100 feet to the northwest from the air monitoring station to a 6-8 feet tall tripod where the microphone will be mounted. The noise tripod will have reflective tape or paint for visibility. The tripod will be held in place with sandbags and will not penetrate the tundra. The air and noise monitoring station will not be located within 100 feet of the shoreline of any nearby water bodies. Enclosed Flare – CPAI will utilize an enclosed flare (during well testing) as a visual mitigation measure. Vertical Seismic Profile (VSP) – CPAI is planning to conduct a vertical seismic profile (VSP) using a tundra approved Vibroseis vehicle (vibe). The velocity survey will be conducted during the wireline operations for the Putu 2 well. The vibe will move outwards in a straight line from the well location for approximately 7,000 ft in a NW direction. The survey will begin in T10N, R5E, Section 9 and extend into T10N, R5E, Section 8. The survey is expected to take approximately 24 hours and once completed the vibe will return to the drill pad.

11. If another permit(s) is required for the above described Projected Use Requirements, provide the following information:

Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No

Agency	Permit Type	Permit Number	Application Status	Projected Use Requirement(s)
ADNR - DOG	Unit Plan of Operations	TBD	Prepared	All
AOGCC	Permit to Drill	TBD	Prepared	1
ADEC	Minor General Air Quality Permit	TBD	Prepared	1
ADEC	Temporary Storage of Drilling Waste	TBD	Prepared	3
ADEC	C-Plan	12-CP-5096	Prepared	3, 4
ADF&G	Public Safety Permit	TBD	Prepared	Section X
ADF&G	Fish Habitat Permit – Lake B8530	FH03-III-0383	Obtained	5
ADF&G	Fish Habitat Permit – Lake M9607	FH03-III-0384	Obtained	5
ADF&G	Fish Habitat Permit – ASRC Mine Site	FH06-III-0336	Obtained	5
ADNR - DMLW	Temporary Water Use Authorization – Lakes B8530 & M9607	TWUP A2013-145	Obtained	5
ADNR - DMLW	Temporary Water Use Authorization - ASRC Mine Site	TWUP A2013-212	Obtained	5
ADNR - OHA	Cultural Clearance	TBD	Prepared	Section IX
NSB	Administrative Permits	TBD	Prepared	All
NSB	Development Permit	TBD	Prepared	All
NSB	TLUI	TBD	Prepared	Section IX
ICAS	Revocable Use Permit	N/A	Obtained	10
USFWS	LOA	TBD	Prepared	Section X
Armstrong Energy, LLC	Letter of Non-Objection	TBD	Prepared	10
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).

SECTION IX: REHABILITATION PLAN

1. Proposed Level of Infrastructure, Facilities and Equipment Removal:

Upon completion of drilling and evaluation operations, all debris will be hauled to an approved disposal site. The ice pads will be chipped or scraped and the scrapings will be hauled to an approved disposal well. The well will be plugged and abandoned prior to the end of the winter drilling season. AOGCC requires that after P&A the well monument is buried 3 ft below tundra grade. CPAI will bury the well monument an additional 5 ft below tundra grade, for a total burial of 8ft below tundra grade. Final site closure will be approved by all appropriate agencies.

2. Description of Restoration and Rehabilitation Activities for Vegetation, Habitat, Impacted Wildlife, and Other Applicable Resources:

In the event that tundra damage is discovered at any point during the drilling program or during summer cleanup operations, CPAI will notify ADNR DLW and the NSB in accordance with permit requirements. If tundra damage occurs on Kuukpik Corporation lands, they will be notified in accordance with CPAI's existing Surface Use Agreement.

SECTION X: OPERATING PROCEDURES DESIGNED TO MINIMIZE ADVERSE EFFECTS

Describe operating procedures designed to prevent or minimize adverse effects on other natural resources and other uses of the Unit area and adjacent areas including:

Fish and Wildlife Habitats: The usual wildlife that could be in the area during the winter are: owls, ravens, arctic fox, musk ox, and possibly an occasional over-wintering caribou. These animals frequent all locations on the North Slope. Grizzly bears also inhabit the general area but it is unlikely they will be active in the winter season. Polar bears are occasionally seen north of this area along the coast, or along the Colville River. Although encounters with polar bears or grizzly bears are unlikely, CPAI and its contractors will exercise caution while establishing the ice transportation route and watch for bear sign. If sign is observed or a den site identified, the ADF&G and US Fish and Wildlife Service (USFWS) will be notified and the transportation route altered to avoid any disturbance. CPAI will employ a Polar Bear/Personnel Encounter Plan approved by the USFWS. A copy of CPAI Polar Bear/Personnel Encounter Plan is located in Appendix C. The probability of encountering a grizzly bear during winter drilling operations is remote. However, should a grizzly bear be encountered, the same procedures outlined in the attached Polar

	Bear/Personnel Encounter Plan would be applicable. Policies to prevent grizzly bear encounters are also the same as for polar bears. Food will be kept inside buildings or containers that minimize odors. Hazardous materials will be kept in drums or other secure containers. Buildings and drill pad layouts should be designed to maximize visibility and minimize potential areas that a bear could crawl into or otherwise be hidden from view. Any sightings should be immediately reported to the site superintendent and personnel in the area warned of the location of the bear. Any grizzly bear sightings will be reported to Security & the Exploration Field Environmental Coordinators, who will then report to the ADF&G and the USFWS. Project personnel will be instructed not to feed wildlife of any type or in any other way attempt to attract them either at the drill site or on the ice transportation route.
Historic and Archeological Sites:	A cultural resources study for site clearance was conducted in July and August of 2017 by Reanier & Associates, Inc. to assess any known sites, and to locate currently unknown sites. The resulting letter reports include back ground information on the history of the landscape and human use of the study area since the last ice age, description of the Putu 2 exploration area; the results of the reconnaissance survey, and conclusions and recommendations for cultural resource clearance. The records review includes the Alaska Heritage Resources Survey (AHRS) database, maintained by the Office of History and Archaeology within the ADNR; and the Traditional Land Use Inventory (TLUI) database, maintained by the NSB. The ice roads and the ice pads, will only be constructed in areas which have been cleared for archaeological/cultural resources. No known cultural resources would be affected by the proposed exploration activities. A letter report detailing the cultural resource surveys will be submitted to ADNR State Historic Preservation Office (SHPO) and NSB TLUI.
Public Use Areas:	Access to the existing operating fields is via the Dalton Highway and is controlled at security checkpoints. Additionally, the Nuiqsut Spur Road is located south of the drilling location. The well site will be closed to the general public for purposes of safety and confidentiality. Site visits by government agency personnel for purposes other than impromptu inspections should be arranged through the CPAI Exploration Field Environmental Coordinator (phone number 907-659-7217).
Other Uses:	The North Slope operating facilities have an Incident Management Team (IMT) which follows the Incident Command System (ICS). The IMT is on call 24-hours per day. Personnel involved in an emergency situation will notify Alpine Security at extension 907-670-4900, who will direct the IMT to respond. The well locations will be accessible by ice road. Environmental Health and Safety Policies and Procedures are available on CPAI's Internet web page and Emergency Response Plans are available at the individual facilities. Training - CPAI requires all North Slope employees and contractors to complete an 8-hour unescorted training program established by the North Slope Training Cooperative (NSTC). All employees receive a Field Environmental Handbook and the Alaska Safety Handbook. The unescorted training includes review of the Alaska Safety Handbook, and sections on personal protective equipment, camps and safety orientation, hazards communication, HAZWOPER Level 1, and Environmental Excellence. Additional NSTC curriculum includes specialized training in hydrogen sulfide, hearing conservation, electrical safety, respiratory protection, energy isolation, confined space entry, asbestos awareness, fall protection, toxic substance control, benzene, NORM, formaldehyde, and first aid/CPR.

SECTION XI: GLOSSARY OF TERMS

Term #	Term	Term Definition
1	ADEC	Alaska Department of Environmental Conservation
2	ADF&G	Alaska Department of Fish & Game
3	ADNR	Alaska Department of Natural Resources
4	AOGCC	Alaska Oil and Gas Conservation Commission
5	ASRC	Arctic Slope Regional Corporation
6	bbl	barrel
7	CPAI	ConocoPhillips Alaska, Inc.
8	CRU	Colville River Unit
9	DMLW	(ADNR) Division of Mining, Land and Water
10	EPA	U.S. Environmental Protection Agency

SECTION XII: CONFIDENTIALITY

The undersigned hereby requests that each page/section of this application marked confidential be held confidential under AS 38.05.035(a)(8).

APPLICANT CONTACT:

Sign here.	Enter Name.	Enter Title.	Enter Date.
Signature	Name	Title	Date

GLOSSARY OF TERMS: SUPPLEMENTAL SECTION		
Term #	Term	Term Definition
11	Kv	Kilovolts
12	gpd	Gallons per day
13	ICAS	Inupiat Community of the Arctic Slope
14	IMT	Incident Management Team
15	KOC	Kuparuk Operations Center
16	LOA	Letter of Authorization
17	NSTC	North Slope Training Cooperative
18	ODPCP	Oil Discharge Prevention and Contingency Plan
19	OHA	Office of History and Archaeology
20	RUP	Revocable Use Permit
21	SHPO	State Historic Preservation Office Permit
22	SPCC	Spill Prevention, Control, and Countermeasure
23	TBD	To be determined
24	TLUI	Traditional Land Use Permit
25	TWUA	Temporary Water Use Authorization
26	USFWS	U.S. Fish and Wildlife Service
27	VSP	Vertical Seismic Profile

APPENDIX A: MAPS

Note: relevant figures are attached.

2017-2018 Putu 2 Exploration Project

Project Overview

151°0'0"W
150°55'0"W
150°50'0"W
70°15'0"N
70°14'0"N
70°13'0"N
70°12'0"N
70°11'0"N

B8530
M9607
M9608
Pikka Unit
ASRC MINE
Nechelik Channel Niglig
Putu Channel
Nuiqsut
T10N R4E
T10N R5E
Colville River Kuukpik
Colville River Unit
National Petroleum Reserve - Alaska
Map extent within Kuukpik Withdrawal boundary.

Exploration Activity

- Well
- Putu 2 Drill Site Ice Pad
- Generator Ice Pad
- Power Cable Support Ice Pads
- Air / Noise Monitoring Station
- Ice Road
- Electric Cable
- Vertical Seismic Profile

Ice Road Source Lakes

- Source Lake

Winter Travel

- Annual Alpine Resupply Ice Road

Infrastructure

- Pipeline
- Nuiqsut Natural Gas Pipeline
- Road
- Pad

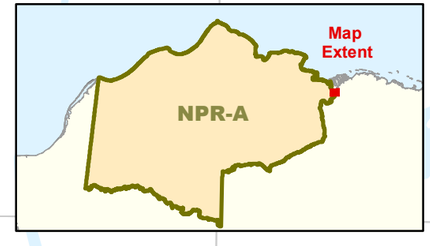
Land Status

- BLM (NPR-A) [1]
- Native Allotment [5]
- Nuiqsut City Boundary [9]
- Cabin or Platform [4]

Oil and Gas Unit

- Unit [2]

Data Sources:
1) BLM, 2017
2) DNR, 2017; BLM, 2017
4) NSB, 2014
5) BLM, 2017
9) DCRA, 1976



N

0 0.5 Miles

ConocoPhillips Alaska, Inc.

October 4, 2017

Document Name: EXP_2017_2018_Putu2_ProjectOverview.mxd

2017-2018 Putu 2 Exploration Project

Project Overview Imagery

Exploration Activity

- Well
- Putu 2 Drill Site Ice Pad
- Generator Ice Pad
- Power Cable Support Ice Pads
- Air / Noise Monitoring Station
- Ice Road
- Electric Cable
- Vertical Seismic Profile

Ice Road Source Lake

- Source Lake

Winter Travel

- Annual Alpine Resupply Ice Road

Infrastructure

- Pipeline
- Nuiqsut Natural Gas Pipeline
- Road
- Pad

Land Status

- BLM (NPR-A) [1]
- Native Allotment [5]
- Nuiqsut City Boundary [9]
- Cabin or Platform [4]

Oil and Gas Unit

- Unit [2]

Data Sources:
1) BLM, 2017
2) DNR, 2017; BLM, 2017
4) NSB, 2014
5) BLM, 2017
9) DCRA, 1976
Image Sources: Quantum Spatial, 2015;Digital Globe

N

0 0.5 Miles

ConocoPhillips Alaska, Inc.

October 4, 2017

Document Name: EXP_2017_2018_Putu2_ProjectOverview_Imagery.mxd

2017-2018 Putu 2 Exploration Project

Leases and Land Status

151°0'0"W 150°55'0"W 150°50'0"W

70°15'0"N 70°14'0"N 70°13'0"N 70°12'0"N

ADL390337 ADL388902 ADL380044 ADL391590 ADL393168 ADL393167 ADL393166 ADL391013

B8530 Pikka Unit

ADL390672 M9608 ADL391914

ADL391915 ADL390674 ADL391536 ADL390675 ADL391773

ASRC MINE

ASRC-NPR5

ADL390673 ADL391535 ADL390677 ADL391016 ADL390676 ADL392972

ADL391015

Nuiqsut

ADL391922 ADL391537

T10N R5E

ADL391923 ADL391917 ADL391916

ADL391918 ADL392973

T10N R4E Colville River Unit

ASRC-NPR7

National Petroleum Reserve - Alaska

ADL391538 ADL391919

ADL390679

Map extent within Kuukpik Withdrawal boundary.

Map Extent

NPR-A

Exploration Activity

- Well
- Putu 2 Drill Site Ice Pad
- Generator Ice Pad
- Power Cable Support Ice Pads
- Air / Noise Monitoring Station
- Ice Road
- Electric Cable
- Vertical Seismic Profile

Winter Travel

- Annual Alpine Resupply Ice Road

Oil and Gas Lease [7]

- AE
- BRPC
- CPAI
- REPSOL

Infrastructure

- Pipeline
- Nuiqsut Natural Gas Pipeline
- Road
- Pad

Land Status

- BLM (NPR-A) [1]
- Native Allotment [5]
- Nuiqsut City Boundary [9]
- Cabin or Platform [4]

Oil and Gas Unit

- Unit [2]

Data Sources:
1) BLM, 2017
2) DNR, 2017; BLM, 2017
4) NSB, 2014
5) BLM, 2017
7) MapMakers Alaska, 2017
9) DCRA, 1976

N

0 0.5 Miles

ConocoPhillips Alaska, Inc.

October 11, 2017

Document Name: EXP_2017_2018_Putu2_Leases_LandStatus.mxd

150°55'0"W 150°54'0"W 150°53'0"W 150°52'0"W

70°14'30"N

70°14'0"N

B8530

M9607

M9608

Pikka Unit

Colville River Unit

Map extent within Kuukpik Withdrawal boundary.

2017-2018 Putu 2 Exploration Project

Electrification Setup

Exploration Activity

- Well
- Putu 2 Drill Site
- Generator Ice Pad
- Power Cable Support Ice Pads
- Air or Noise Monitoring Station
- Ice Road
- Electric Cable
- Vertical Seismic Profile

Ice Road Source Lakes

- Source Lake

Winter Travel

- Annual Alpine Resupply Ice Road

Infrastructure

- Pipeline
- Nuiqsut Natural Gas Pipeline
- Road
- Pad

Land Status

- Nuiqsut City Boundary [9]

Oil and Gas Unit

- Unit [2]

Data Sources:
2) DNR, 2017; BLM, 2017
9) DCRA, 1976

Image Sources: Quantum Spatial, 2015

N

0 500 1,000 Feet

ConocoPhillips Alaska, Inc.

October 4, 2017

Document Name: EXP_2017_2018_Putu2_Electrification_Setup.mxd

2017-2018 Putu 2 Exploration Project

NSB Zoning Districts

70°15'0"N
70°14'0"N
70°13'0"N
70°12'0"N
70°11'0"N
151°0'0"W
150°55'0"W
150°50'0"W

B8530
M9608
Pikka Unit
ASRC MINE
Nechelik Channel Niglig
Putu Channel
Nuiqsut
T10N R5E
T10N R4E
Colville River Kuukpik
Colville River Unit
National Petroleum Reserve - Alaska
Map extent within Kuukpik Withdrawal boundary.

Exploration Activity

- Well
- Putu 2 Drill Site Ice Pad
- Generator Ice Pad
- Power Cable Support Ice Pads
- Air / Noise Monitoring Station
- Ice Road
- Electric Cable
- Vertical Seismic Profile

Ice Road Source Lake

- Source Lake

Winter Travel

- Annual Alpine Resupply Ice Road

Infrastructure

- Pipeline
- Nuiqsut Natural Gas Pipeline
- Road
- Pad

Resource Development Districts [8]

- Alpine
- CD5
- Alpine Satellite

Land Status

- BLM (NPR-A) [1]
- Native Allotment [5]
- Nuiqsut City Boundary [9]
- Cabin or Platform [4]

Oil and Gas Unit

- Unit [2]

Data Sources:
1) BLM, 2017
2) DNR, 2017; BLM, 2017
4) NSB, 2014
5) BLM, 2017
8) NSB, 2015
9) DCRA, 1976

N

0 0.5 Miles

ConocoPhillips Alaska, Inc.

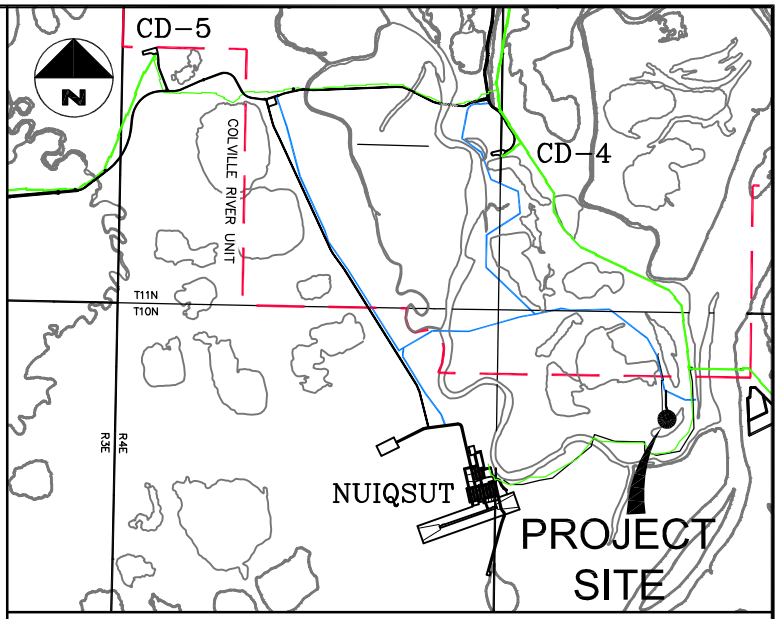
October 4, 2017

Document Name: EXP_2017_2018_Putu2_ResourceDevelopmentDistricts.mxd

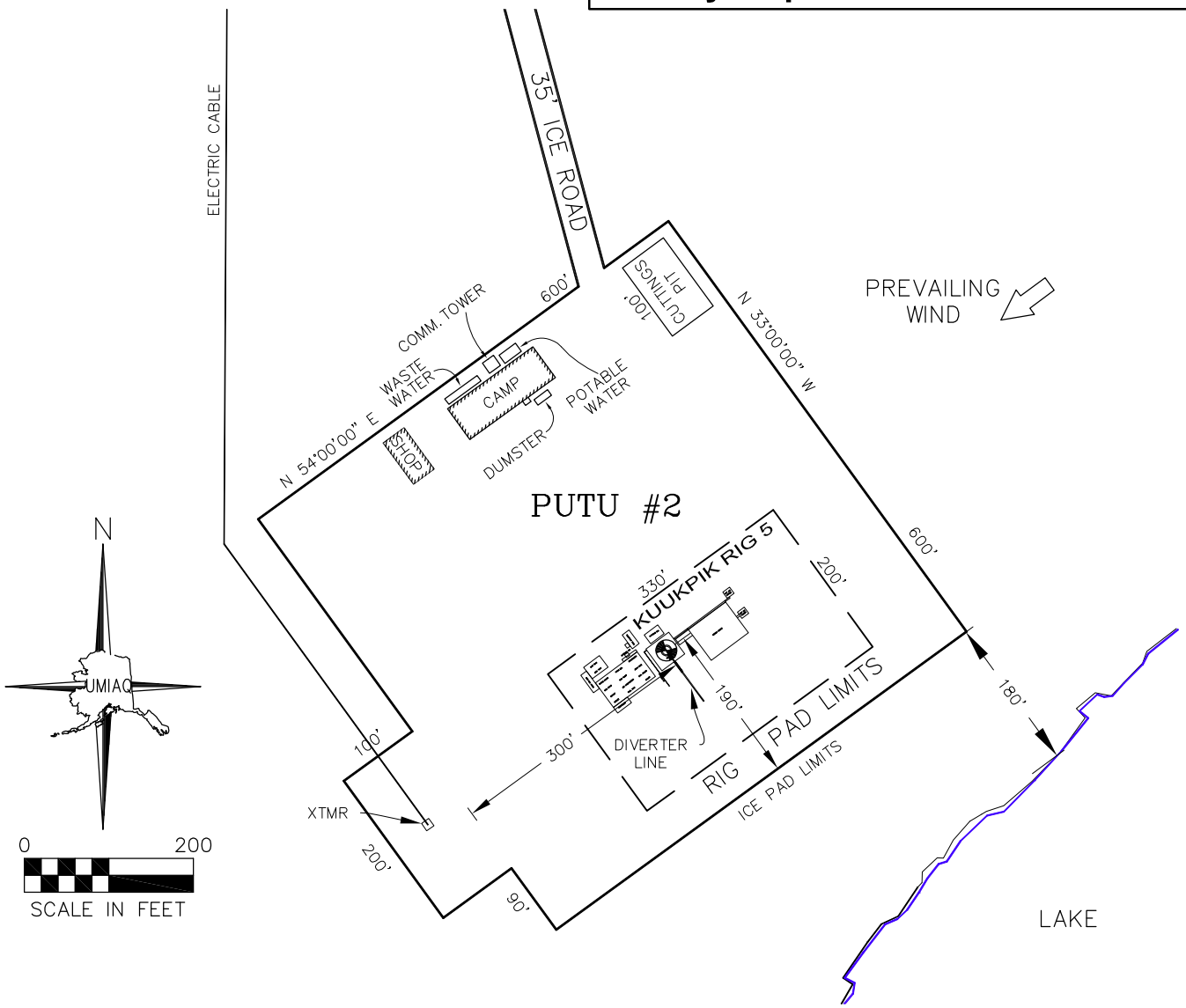
PUTU 2 PAD

LOCATED WITHIN PROTRACTED
SECTION 9, T. 10 N., R. 5 E.
UMIAT MERIDIAN, ALASKA
1946' FSL 1441' FEL

NAD83 Datum	NAD27 Datum
N 70°13'59.6"	N 70°14'00.8"
W 150°52'28.1"	W 150°52'16.9"
ASPC ZN4	**ASPC ZN4**
(Y) 5,935,491	(Y) 5,935,743
(X) 1,532,098	(X) 392,063



Vicinity Map NOT TO SCALE



KUUKPIK UMIAQ
ALPINE SURVEY OFFICE
PHONE : 907-670-4739

CONOCOPHILLIPS OF ALASKA, INC.

PUTU 2 WELL
PAD LAYOUT
ALPINE, ALASKA

DATE: 09/01/17	DRAWN BY: KD	SHEET: 1
SCALE: 1" = 200'	CHECKED BY: CZ	W.O. No: 17-07-14-1

Revision: 4

AUTOCAD DRAWING NAME: 17-07-14-1 Putu2 Pad Layout Rev4.dwg PLOTTING DATE: 10/4/2017 5:31 AM

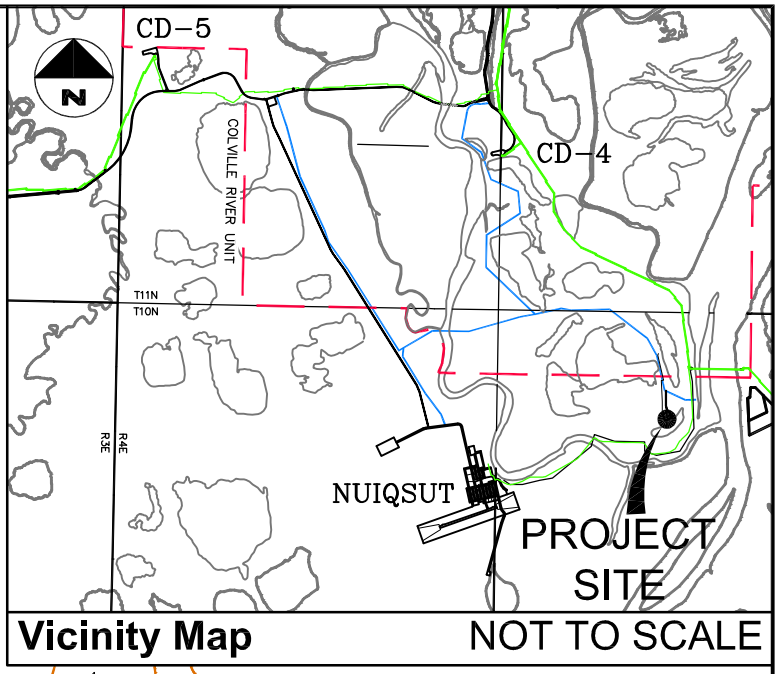
NOTES:

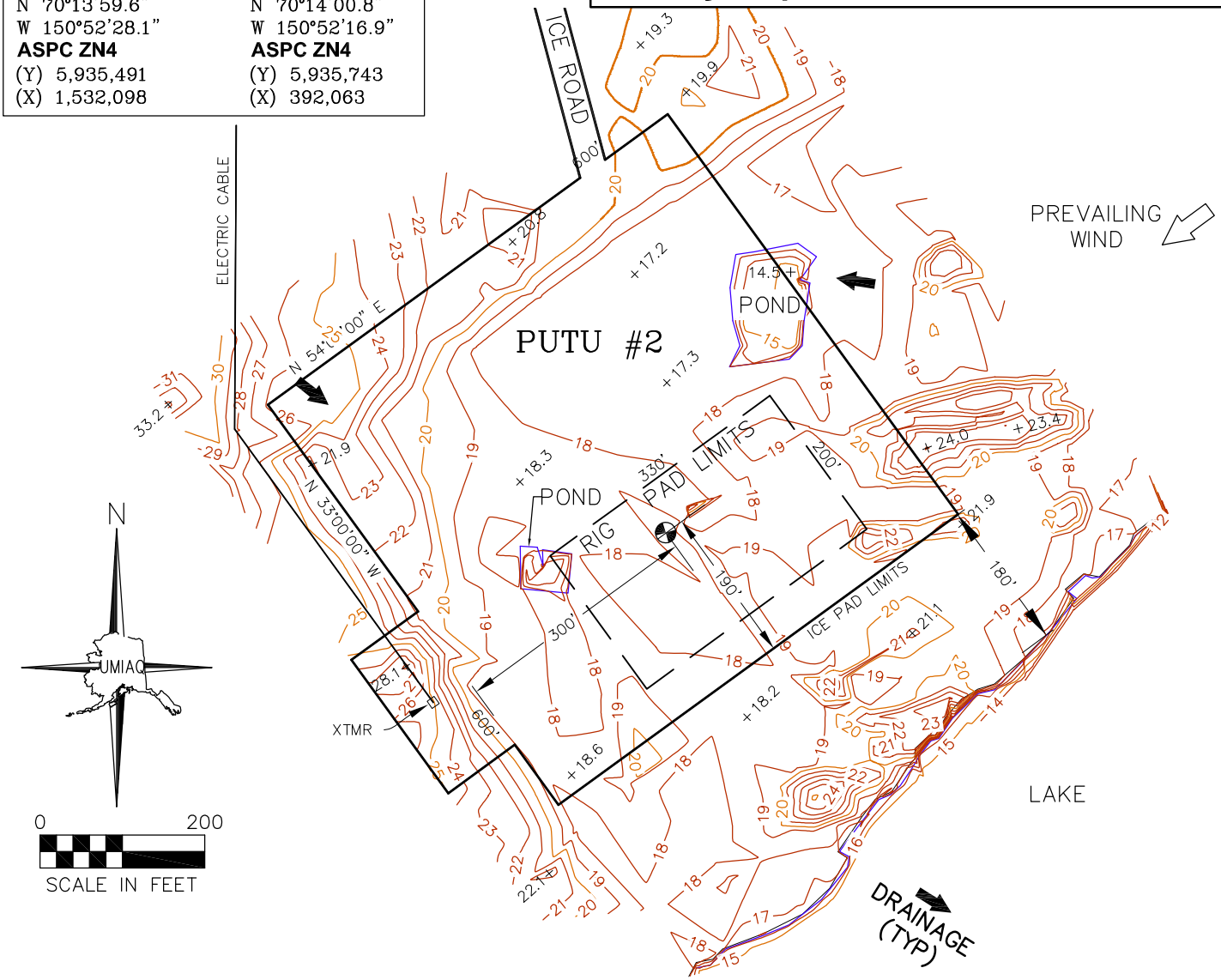
1. BASIS OF COORDINATES: OPUS SOLUTION OF GPS STATIC OBSERVATIONS 8/29/2017.
2. COORDINATES ARE NAD83, ALASKA STATE PLANE ZONE 4.
3. ELEVATIONS ARE CONVERTED FROM OPUS NAVD88 TO B.P.M.S.L. VERTICAL DATUM. (−3.5' ± DIFF.)
4. DISTANCES ARE TRUE. ALL DISTANCES AND ELEVATIONS ARE IN US SURVEY FEET.
5. DATE OF SURVEY: 8/29&31/2017.

PUTU 2 PAD

LOCATED WITHIN PROTRACTED
SECTION 9, T. 10 N., R. 5 E.
UMIAT MERIDIAN, ALASKA
1946' FSL 1441' FEL

NAD83 Datum	NAD27 Datum
N 70°13'59.6"	N 70°14'00.8"
W 150°52'28.1"	W 150°52'16.9"
ASPC ZN4	**ASPC ZN4**
(Y) 5,935,491	(Y) 5,935,743
(X) 1,532,098	(X) 392,063





KUUKPIK UMIAQ
ALPINE SURVEY OFFICE
PHONE : 907-670-4739

CONOCOPHILLIPS OF ALASKA, INC.
PUTU 2 WELL
SITE TOPOGRAPHIC SURVEY
ALPINE, ALASKA

DATE: 09/01/17	DRAWN BY: KD	SHEET: 1
SCALE: 1" = 200'	CHECKED BY: CZ	W.O. No: 17−07−14−1

Revision: 3

APPENDIX B: MITIGATION MEASURES

See attached.

Alaska Department of Natural Resources
Division of Oil & Gas
550 W 7th Ave. Suite 800
Anchorage, Alaska 99501

Revised: March 2013

MITIGATION MEASURE ANALYSIS: NORTH SLOPE

The following instructions are provided for guidance to adequately complete the Mitigation Measure Analysis form.

1. The applicant shall respond to each Mitigation Measure, and all subsets of mitigation measures; i.e. A.2.d.i should be addressed and A.2.d.ii, and so forth.

2. The applicant's response shall begin by clearly indicating if the **mitigation measure is satisfied**, an **exception is requested**, or if the mitigation measure is **not applicable**.

3. The applicants' response shall then address how the proposed project clearly satisfies the mitigation measure, meets the intent of the mitigation measure, is not practicable, or is not applicable.

4. The applicant shall verify working 'in consultation with' parties other than Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) by reporting meeting dates and parties present for Mitigation Measures which require consultation with parties other than DNR, DO&G; i.e. Mitigation Measure 1.b.

Please note that this form, along with the Plan of Operations Application form and the Plan of Operations, must be adequately completed before DNR DO&G will review an application for potential approval.

NORTH SLOPE **A. Mitigation Measures**	**Company Response**
1. Facilities and Operations	
a. A plan of operations must be submitted and approved before conducting exploration, development or production activities, and must describe the lessee's efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. At the time of application, lessee must submit a copy of the proposed plan of operations to all surface owners whose property will be entered.	A.1.a. Satisfied. The Unit Plan of Operations was submitted with the permit applications. The surface location of the Putu 2 exploration program is owned by the Kuukpik Corporation. CPAI has a surface use agreement with Kuukpik Corporation and will be working with them closely for this exploration program. CPAI submitted a draft copy of the proposed plan of operations to Kuukpik on 9/1/2017. There is a Native Allotment (AKFF 011723) southwest of the proposed drilling ice pad boundary located in T10N, R5E, Section 16 and 17. The proposed drilling ice pad southern boundary is at least 2,600 feet from the Native Allotment northeast boundary. CPAI obtained a Revocable Use Permit (RUP) from the allotment owners through the Inupiat Community of the Arctic (ICAS) in 2016 and the RUP is effective for the 2017/2018 exploration drilling season.
b. Facilities must be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Methods may include providing natural buffers and screening to conceal facilities, sound insulation of facilities, or by using alternative means approved by the Director, in consultation with ADF&G and the NSB.	A.1.b. Satisfied. The proposed project is located approximately 3 miles from the village of Nuiqsut. CPAI moved the well location ~3/4 of a mile to the NE (from original desired well location) based on stakeholder concerns about proximity to the village. All proposed facilities are temporary in nature and include ice roads and ice pads. Before demobilization, the well will be permanently plugged and abandoned. The well monument will be buried 5ft below the minimum depth of 3 ft below tundra grade (monument will be buried 8ft below tundra grade). The drilling rig will be powered by six Tier 4 diesel generators (Tier 4

	generator set) located on an ice pad ('generator ice pad') ~1 mile north of the Putu 2 drilling ice pad. A 13.8 kilovolt (kV) power cable line will run from the Putu 2 drilling ice pad to the generator ice pad. The power cable line will be encapsulated in ice approximately 25-feet wide and approximately 25-inches thick. Transportation vehicles will not utilize the ice encapsulated surface as it will not be an ice road, it will be solely to protect the power cable that is supplying power from the generators to the drill rig. Where the power cable line crosses under the Alpine Resupply Ice Road, the power cable line will be protected in an 8-inch diameter casing (~75 feet long). The protective casing will be encapsulated in ice approximately 30-inches thick. The exact location will need to be field verified, however a 'low point' along the Alpine Resupply ice road would be optimal. Three air monitoring stations and one noise monitor will support the Putu 2 project. An existing air monitoring station is located in the NE corner of the village of Nuiqsut. A temporary air monitoring station will be located on the generator ice pad and an additional temporary sled-mounted air/noise monitoring station will be placed (via tucker) at the northeast corner of the Nuiqsut municipal boundary. At the municipal boundary station, the temperature-sensitive components of the noise monitoring equipment will be housed inside the heated air monitoring station. A hand buried cord (in snow) will then extend 100 feet to the northwest from the air monitor station to a 6-8 feet tall tripod where a noise-receiving microphone will be mounted. The microphone tripod will have reflective paint or tape for visibility. The tripod will be held in place with sandbags and nothing will penetrate the tundra. The air and noise monitor station will not be located within 100 feet of the shoreline of any nearby water bodies. CPAI will limit vehicle engine idling and traffic on the Putu 2 drilling ice pad. This will be done to reduce noise affecting the village of Nuiqsut. Also, if there is sufficient snow in the surrounding area of the drill ice pad, CPAI will erect a snow berm on the appropriate side(s) of the drill pad to help buffer/dampen noise caused by the Putu 2 drilling

	operations. A lighting plan for the Putu 2 drilling ice pad will be developed to reduce lights visible from the village of Nuiqsut. CPAI has designed, sited, and proposes to operate the exploration drilling facilities in accordance with the North Slope mitigation measures and fish habitat permits issued from ADF&G. All proposed activities will take place during the winter and are intended to avoid and minimize impacts to wetlands, habitat, and subsistence.
c. To the extent practicable, the siting of facilities will be prohibited within 500 feet of all fish-bearing streams and waterbodies and 1,500 feet from all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the Director, in consultation with ADF&G, that site locations outside these buffers are not practicable or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.	A.1.c. Waiver Requested. The proposed Putu 2 project components will not be within 500 feet from any fish-bearing streams or 1,500 feet from current surface drinking water sources. Nuiqsut drinking water source is approximately 3.5 miles from the Putu 2 well. The proposed generator ice pad will be situated so that the pad edge is no closer than 100 feet from the shoreline of lake M9607 which is a fish-bearing lake, however the pad will be located within 500 feet of the lake. Water from lake M9607 is not a water source that will support the project. The lake is not a surface drinking water source. Waiver requested. The proposed drill ice pad will be situated so that the pad edge is no closer than 100 feet from the shoreline of the unnamed lake located just south of the drill ice pad, however, the pad will be within 500 feet of the unnamed lake. Water from the unnamed lake is not a water source that will support the project. The lake is not a surface drinking water source but may contain fish. Waiver requested. The generator ice pad and the electrical cable support ice pads will not be within one-half mile of the banks of the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. The Putu 2 drilling ice pad is situated within 0.3 miles of the banks of

	the Colville channel and is therefore within the one-half mile buffer from the Colville. Waiver requested. All fueling and transfer operations will be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPAI-005) and liners will be used in accordance with the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). Spill response equipment will be on hand during any transfer or handling of fuel or hazardous substances sufficient to respond to a spill of up to five gallons. The proposed project will use existing road systems as well as a temporary, single-season construction ice road for road access. No new permanent power lines or utilities will be constructed. All proposed activities will take place during the winter and are intended to avoid and minimize impacts to wetlands, habitat, and subsistence. There are few or no adverse impacts expected from this project to subsistence use.
d. No facilities will be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers. Notwithstanding the previous sentence, road and pipeline crossings may only be sited within these buffers if the lessee demonstrates to the satisfaction of the Director and ADF&G in the course of obtaining their respective permits, that either (1) the scientific data indicate the proposed crossing is not within an overwintering and/or spawning area; or (2) the proposed road or pipeline crossing will have no significant adverse impact to Dolly Varden overwintering and/or spawning habitat.	A.1.d. Satisfied. The proposed project will not be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers.
e. Impacts to important wetlands must be minimized to the satisfaction of the Director, in consultation with ADF&G and ADEC. The Director will consider whether facilities are sited in the least sensitive areas. Further, all activities within wetlands require permission from the US Army Corps of Engineers.	A.1.e. Satisfied. The project will be conducted during the winter using ice roads and ice pads. Upon completion of the project, the exploration well will be plugged and abandoned. No permanent facilities will be constructed. No U.S. Army Corps of Engineers authorization is required as no fill will be placed on to wetlands.
f. Exploration facilities, including exploration roads and pads, must be temporary and must be constructed of ice unless the Director determines that no practicable alternative exists. Re-use of abandoned gravel structures may be permitted on a case-by-case	A.1.f. Satisfied. All proposed facilities are temporary in nature and include ice pads

basis by the Director, after consultation with the director, DMLW, and ADF&G. Approval for use of abandoned structures will depend on the extent and method of restoration needed to return these structures to a usable condition.	and ice roads.
g. Pipelines must utilize existing transportation corridors where conditions permit. Pipelines must be designed to facilitate the containment and cleanup of spilled fluids. Where practicable, onshore pipelines must be located on the upslope side of roadways and construction pads, unless the director, DMLW, determines that an alternative site is environmentally acceptable. Wherever possible, onshore pipelines must utilize existing transportation corridors and be buried where soil and geophysical conditions permit. All pipelines, including flow and gathering lines, must be designed, constructed and maintained to assure integrity against climatic conditions, geophysical hazards, corrosion and other hazards as determined on a case-by-case basis.	A.1.g. Not Applicable. No pipelines will be constructed.
h. Pipelines shall be designed and constructed to avoid significant alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above-ground pipelines shall be elevated 7 feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. Lessees shall consider increased snow depth in the sale area in relation to pipe elevation to ensure adequate clearance for wildlife. ADNR may, after consultation with ADF&G, require additional measures to mitigate impacts to wildlife movement and migration. i. The state of Alaska discourages the use of continuous-fill causeways. Environmentally preferred alternatives for field development include use of buried pipelines, onshore directional drilling, or elevated structures. Approved causeways must be designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g., salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish. ii. Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom founded structures shall not be located in river mouths or active stream channels on river deltas, except as provided for in (iii). iii. Each proposed structure will be reviewed on a case-by-case basis. Causeways, docks, artificial gravel islands and bottom founded structures may be permitted if the Director, in consultation with ADF&G, ADEC, and the NSB determines that a causeway or other structures are necessary for field development and that no practicable alternatives exist. A monitoring program may be required to	A.1.h. Not Applicable. No pipelines will be constructed. A.1.h.i. Not Applicable. No causeways or permanent structures will be placed. A.1.h.ii. Not Applicable. No causeways or permanent structures will be placed. A.1.h.iii. Not Applicable. No causeways or permanent structures will be placed.

address the objectives of water quality and free passage of fish, and mitigation shall be required where significant deviation from objectives occurs.	
i. Dismantlement, Removal and Rehabilitation (DR&R): Upon abandonment of material sites, drilling sites, roads, buildings or other facilities, such facilities must be removed and the site rehabilitated to the satisfaction of the Director, unless the Director, in consultation with DMLW, ADF&G, ADEC, NSB, and any non-state surface owner, determines that such removal and rehabilitation is not in the state's interest.	A.1.i. Satisfied. Before demobilization, the exploration well will be permanently plugged and abandoned. The well monument will be buried 5ft below the minimum depth of 3 ft below tundra grade (monument will be buried 8ft below tundra grade). The ice pads structure will melt and return to the wetlands. No fill will be placed and no permanent facilities left in place following the project.
j. Gravel mining sites required for exploration and development activities will be restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage. Where practicable, gravel sites must be designed and constructed to function as water reservoirs for future use. Gravel mine sites required for exploration activities must not be located within an active floodplain of a watercourse unless the director, DMLW, after consultation with ADF&G, determines that there is no practicable alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed. Mine site development and rehabilitation within floodplains must follow the procedures outlined in McLean, R. F. 1993, North Slope Gravel Pit Performance Guidelines, ADF&G Habitat and Restoration Division Technical Report 93-9, available from ADF&G.	A.1.j. Not Applicable. The project will be conducted during the winter using ice roads and ice pads. No new gravel mines are required for this project.
2. Fish and Wildlife Habitat	

Detonation of explosives within or in proximity to fish-bearing waters must not produce instantaneous pressure changes that exceed 2.7 pounds per square inch in the swim bladder of a fish. Detonation of explosives within or in close proximity to a fish spawning bed during the early stages of egg incubation must not produce a peak particle velocity greater than 0.5 inches per second. Blasting criteria have been developed by ADF&G and are available upon request from ADF&G. The location of known fish-bearing waters within the project area can also be obtained from ADF&G. The lessee will consult with the NSB prior to proposing the use of explosives for seismic surveys. The Director may approve the use of explosives for seismic surveys after consultation with the NSB.	A.2.a. Not Applicable. The proposed project does not include the use of explosives and is not a seismic project.
b. Water intake pipes used to remove water from fish-bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall be no greater than 1 mm (0.04 inches), unless another size has been approved by ADF&G. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second, unless an alternative velocity has been approved by ADF&G.	A.2.b. Satisfied. Water removal from fish bearing lakes for ice roads and construction will follow ADF&G requirements for velocity and screened enclosures.
c. Removal of snow from fish-bearing rivers, streams and natural lakes shall be subject to prior written approval by ADF&G. Compaction of snow cover overlying fish-bearing waterbodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice or snow bridges may be required.	A.2.c. Satisfied. CPAI will obtain ADF&G approval prior to the removal of snow from fish-bearing lakes for water/ice sources and will comply with ADF&G requirements.
d. Bears: i. Before commencement of any activities, lessees shall consult with ADF&G (907-459-7213) to identify the locations of known brown bear den sites that are occupied in the season of proposed activities. Exploration and production activities must not be conducted within one-half mile of occupied brown bear dens, unless alternative mitigation measures are approved by ADF&G. A lessee who encounters an occupied brown bear den not previously identified by ADF&G must report it to the Division of Wildlife Conservation, ADF&G, within 24 hours. Mobile activities shall avoid such discovered occupied dens by one-half mile unless alternative mitigation measures are approved by the Director, with concurrence from ADF&G. Non-mobile facilities will not be required to relocate.	A.2.d. A.2.d.i. Satisfied. CPAI will consult with ADF&G prior to the start of activities to identify any known brown bear den sites within one-half mile of the project. All brown bear dens encountered by project personnel will be reported to ADF&G within 24 hours. If deviation from the requirement is necessary, ADF&G personnel will be contacted for approval. Please refer to CPAI's Wildlife Avoidance and Interaction Plan attached for further details. A.2.d.ii. Satisfied.

ii. Before commencement of any activities, lessees shall consult with the USFWS (907-786-3800) to identify the locations of known polar bear den sites. Operations must avoid known polar bear dens by 1 mile. A lessee who encounters an occupied polar bear den not previously identified by USFWS must report it to the USFWS within 24 hours and subsequently avoid the new den by 1 mile. If a polar bear should den within an existing development, off-site activities shall be restricted to minimize disturbance.	CPAI will perform an aerial Forward Looking Infrared (FLIR) survey of the project area in order to identify any polar bear dens and consult with the USFWS to confirm that there are no known polar bear dens within one mile of the project. All polar bear dens encountered by project personnel will be reported to ADF&G within 24 hours. See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
iii. For projects in proximity to areas frequented by bears, lessees are required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan should include measures to:	A.2.d.iii.A. Satisfied. The proposed project will implement the CPAI Wildlife Avoidance and Interaction Plan to minimize conflicts between bears and humans. The plan discusses the proper handling of food and food waste, infrastructure design, grizzly and polar bear alert system, deterrence guidelines, and reporting. See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
A. minimize attraction of bears to facility sites;	A.2.d.iii.B Satisfied.
B. organize layout of buildings and work areas to minimize interactions between humans and bears;	See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
C. warn personnel of bears near or on facilities and the proper actions to take;	A.2.d.iii.C. Satisfied.
D. if authorized, deter bears from the drill site;	See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
E. provide contingencies in the event bears do not leave the site;	A.2.d.iii.D. Satisfied.
F. discuss proper storage and disposal of materials that may be toxic to bears; and	See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
G. provide a systematic record of bears on the site and in the immediate area.	A.2.d.iii.E. Satisfied. See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
	A.2.d.iii.F. Satisfied. See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan

	of Operations in Appendix C. A.2.d.iii.G. Satisfied. See the *Polar Bear/Personnel Encounter Plan* submitted with the Plan of Operations in Appendix C.
e. Permanent, staffed facilities must be sited to the extent practicable outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, Steller's eider, spectacled eider, and yellow-billed loon nesting and brood rearing areas.	A.2.e. Not Applicable. The project will be conducted during the winter using ice roads and ice pads. Upon completion of the project, the well will be plugged and abandoned and no permanent facilities will be left in place following project completion.
3. Subsistence, Commercial and Sport Harvest Activities	

a. i. Exploration, development and production operations shall be conducted in a manner that prevents unreasonable conflicts between lease-related activities and subsistence activities. Lease-related use will be restricted when the Director determines it is necessary to prevent conflicts with local subsistence, commercial and sport harvest activities. In enforcing this term DO&G will consult with other agencies, the affected local borough(s) and the public to identify and avoid potential conflicts that are brought to the division's attention both in the planning and operational phases of lease-related activities. In order to avoid conflicts with subsistence, commercial and sport harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by the Director. ii. Prior to submitting a plan of operations for either onshore or offshore activities which have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the NSB (collectively "parties") to discuss the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. The parties shall also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee's proposed operations. Through this consultation, the lessee shall make reasonable efforts to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests. iii. A discussion of agreements reached or not reached during the consultation process and any plans for continued consultation shall be included in the plan of operations. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division. iv. If the parties cannot agree, then any of them may request the Commissioner of DNR or his/her designee to intercede. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties.	A.3.a.i. Satisfied. The project will take place during the winter months when there is little subsistence hunting activity in the area. There are few or no adverse impacts expected from this project to subsistence use. A.3.a.ii. Satisfied. CPAI will conduct meetings with permitting agencies to discuss the project scope, schedule, and potential subsistence impacts. Community meetings in Nuiqsut, AK are scheduled for the fall of 2017 to discuss the proposed project. CPAI has implemented several mitigation measures after collaboration with the surface landowner (Kuukpik Corporation). These include the emissions mitigation (offsite Tier 4 diesel generator set powering drill rig), increased air monitoring, noise monitoring and mitigation, light mitigation, and vehicle traffic plans. CPAI will hire a dedicated subsistence representative for the Putu 2 project and will provide CPAI village liaison representation in Nuiqsut during the project duration. CPAI will also conduct water quality sampling from the Nuiqsut drinking water supply (Tagruk Lake) before and after the drilling season. This lake is located ~3.5 miles from the Putu 2 drilling site. These mitigations will be further communicated to Nuiqsut village residents at Open House events and community meetings in the fall of 2017. The project will take place during the winter months when there is little subsistence hunting activity in the area. There are few or no adverse impacts expected from this project to subsistence use. A.3.a.iii. Satisfied CPAI has a Surface Use Agreement with Kuukpik Corporation, the surface owner. The Putu 2 Plan of Operations was submitted to Kuukpik Corporation for review and comment on September 1, 2017. CPAI will conduct meetings with subsistence communities and the

v. The lessee shall notify the Director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.	NSB to discuss the project scope, schedule, and potential impacts. A.3.a.iv. Satisfied. CPAI will conduct meetings with subsistence communities and the NSB to discuss the project scope, schedule, and potential impacts. A.3.a.v. Not Applicable. The director will be notified of any subsistence user concerns during operation of the proposed project.
b. Traditional and customary access to subsistence areas shall be maintained unless reasonable alternative access is provided to subsistence users. "Reasonable access" is access using means generally available to subsistence users. Lessees will consult the NSB, nearby communities, and native organizations for assistance in identifying and contacting local subsistence users.	A.3.b. Satisfied. The project will take place during winter months when there is little subsistence hunting activity in the area. Customary and reasonable access to the area will be maintained and any subsistence access concerns will be discussed with the Kuukpik Subsistence Oversight Panel (KSOP).
4. Fuel, Hazardous Substances and Waste	
a. Secondary containment shall be provided for the storage of fuel or hazardous substances.	A.4.a. Satisfied. Fuel storage and other oil storage containers will have secondary containment and will all be placed in lined bermed containment. All fueling and transfer operations will be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPAI-005) and liners will be used as required by the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). Drip pans will be placed under parked vehicles or equipment to capture fluids.

b. Containers with an aggregate storage capacity of greater than 55 gallons which contain fuel or hazardous substances shall not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.	A.4.b. Satisfied. Containers will not be stored within 100 feet of lakes M9607, B8530, M9607. These lakes are not drinking water sources. Nuiqsut drinking water source (Tagruk Lake) is approximately 3.5 miles from the Putu 2 well.
c. During equipment storage or maintenance, the site shall be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.	A.4.c. Satisfied. All fueling and transfer operations will be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPAI-005) and liners will be used as required by the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). Drip pans will be placed under parked vehicles or equipment to capture fluids.
d. During fuel or hazardous substance transfer, secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to five gallons, must be on hand during any transfer or handling of fuel or hazardous substances. Trained personnel shall attend transfer operations at all times.	A.4.d. Satisfied. Fuel and hazardous substance transfers will be performed in accordance with CPAI Fieldwide Standard Operating Procedure for Fluid Transfers. Spill response equipment will be on hand during any transfer or handling of fuel or hazardous substances sufficient to respond to a spill of up to five gallons. CPAI will provide training to employees on preventing oil or hazardous materials.
e. Vehicle refueling shall not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.	A.4.e. Waiver is requested. The proposed drilling location is in the Colville River floodplain and refueling in the floodplain cannot be avoided as the project is in close proximity to the Colville River. Refueling within the Colville River floodplain will be limited to generators, drilling and testing and will be conducted in accordance with procedures included in the C-Plan. Fluid transfers are described in the Plan of Operations and supporting documents submitted with the permit applications.
f. All independent fuel and hazardous substance containers shall be marked with the	A.4.f. Satisfied.

contents and the lessee's or contractor's name using paint or a permanent label.	All containers with fuel or hazardous substances will be labeled with the contents and lessee's/contractor's name.
g. A fresh water aquifer monitoring well, and quarterly water quality monitoring, is required down gradient of a permanent storage facility, unless alternative acceptable technology is approved by ADEC.	A.4.g. Not Applicable. The project does not include a permanent storage facility.
h. Waste from operations must be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated whenever possible or disposed of at an approved site in accordance with 18 AAC 60.	A.4.h. Satisfied. Solid, non-burnable waste will be deposited in large dumpsters located at the site. These containers will be back-hauled to the NSB landfill at Prudhoe Bay. Food waste that could attract wildlife will remain in a secured wildlife-proof container while waiting for pickup.
i. New solid waste disposal sites, other than for drilling waste, will not be approved or located on state property during the exploration phase of lease activities. Disposal sites may be provided for drilling waste if the facility complies with 18 AAC 60.	A.4.i. Not Applicable. No new solid waste disposal sites will be developed as part of CPAI proposed project. This project will only include temporary storage of drilling wastes which will be disposed of at a permitted facility.
j. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Drilling mud and cuttings cannot be discharged into lakes, streams, rivers, or important wetlands. On pad temporary cuttings storage will be allowed as necessary to facilitate annular injection and/or backhaul operations. Impermeable lining and diking, or equivalent measures, will be required for reserve pits. Surface discharge of drilling muds and cuttings into reserve pits shall be allowed only when the Director, in consultation with ADF&G, determines that alternative disposal methods are not practicable. Injection of non-hazardous oilfield wastes is regulated by AOGCC through its Underground Injection Control (UIC) Program for oil and gas wells. See also Mitigation Measure 8.a.vi.	A.4.j. Satisfied. Excess drilling muds and drill cuttings will be disposed by of injection into an approved Class II well at Alpine or Kuparuk or through the grind and inject facility (Drill Site 4) at Prudhoe Bay. Prior to hauling, the cuttings will be temporarily stored in containers in a permitted ice bermed storage cell.
k. Proper disposal of garbage and putrescible waste is essential to minimize attraction of wildlife. The lessee must use the most appropriate and efficient method to achieve this goal. The primary method of garbage and putrescible waste is prompt, on-site incineration in compliance with state of Alaska air quality regulations. The secondary method of disposal is on-site frozen storage in animal-proof containers with backhaul to an approved waste disposal facility. The tertiary method of disposal is on-site non-frozen storage in animal proof containers with backhaul to an approved waste disposal facility. Daily backhauling of non-frozen waste must be achieved unless safety considerations	A.4.k. Satisfied. Solid, non-burnable waste will be deposited in large dumpsters located at the site. These containers will be back-hauled to the NSB landfill at Prudhoe Bay. Food waste that could attract wildlife will be placed in a secured wildlife proof container while waiting for pickup.

prevent it.	
5. Access	
a. Except for approved off-road travel, exploration activities must be supported only by ice roads, winter trails, existing road systems or air service. Wintertime off-road travel across tundra and wetlands may be approved in areas where snow and frost depths are sufficient to protect the ground surface. Summertime off-road travel across tundra and wetlands may be authorized subject to time periods and vehicle types approved by DMLW. Exceptions may be granted by the director of the DMLW, and the Director, if an emergency condition exists; or, if it is determined, after consulting with ADF&G that travel can be accomplished without damaging vegetation or the ground surface. Exceptions, including the use of gravel, may also be granted on a site specific basis, if it is determined, after consulting with ADF&G and DMLW, that no practicable alternatives exist for constructing an exploration road or pad in the area south of the boundary described below and depicted in the map below:	A.5.a. Satisfied. The ice roads and ice pads will be constructed after appropriate authorizations are in place. Only ADNR DMLW approved vehicles will be used off road and only when tundra conditions allow. No gravel roads or pads will be constructed.

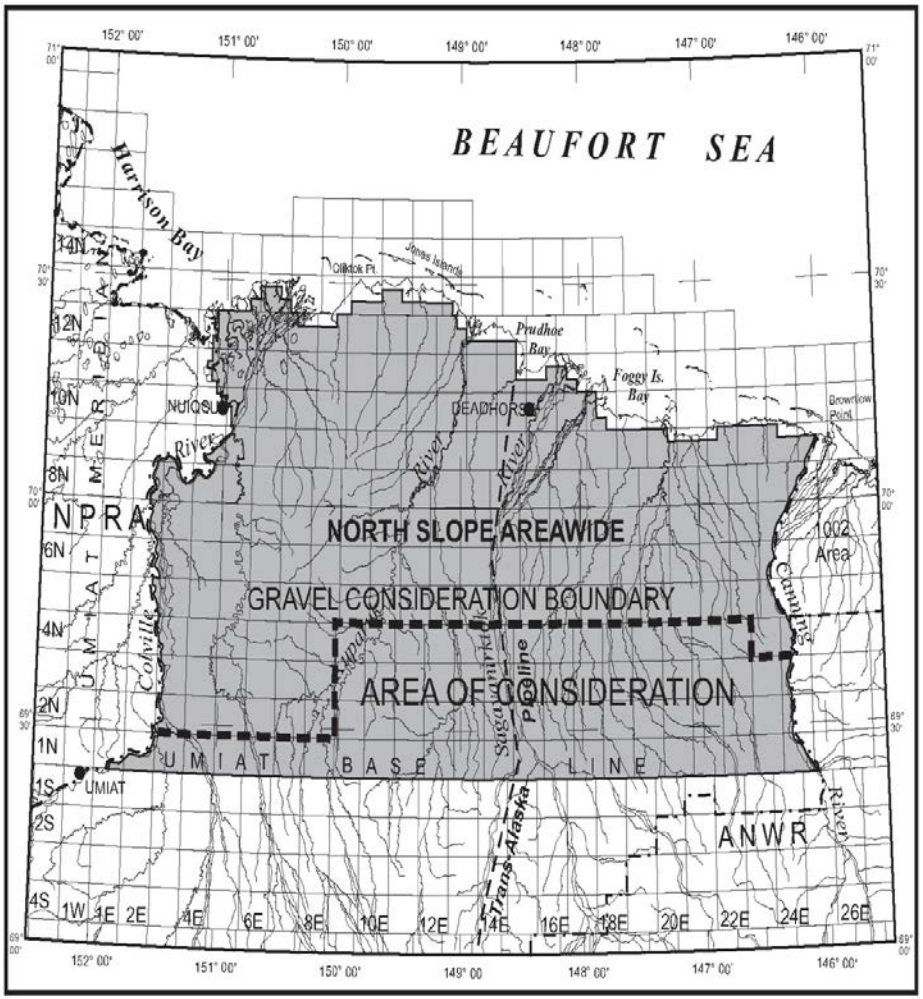


Figure 7.1: Gravel Consideration Boundary

Beginning at the NPR-A boundary, from the northeast corner of T 1N, R 2E, • east to the northwest corner of T 1N, R 9E, then • north to the northwest corner of T 4N, R 9E, then • east to the northwest corner of T 4N, R 23E, then • south to the southwest corner of T 4N, R 23E, and then • east along the top of T 3N to the ANWR boundary.	
Figure 7.1: Gravel Consideration Boundary Beginning at the NPR-A boundary, from the northeast corner of T 1N, R 2E, • east to the northwest corner of T 1N, R 9E, then • north to the northwest corner of T 4N, R 9E, then • east to the northwest corner of T 4N, R 23E, then • south to the southwest corner of T 4N, R 23E, and then • east along the top of T 3N to the ANWR boundary.	
b. Public access to, or use of, the lease area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related facilities. Areas of restricted access must be identified in the plan of operations. Lease facilities and operations shall not be located so as to block access to or along navigable or public waters as defined in AS 38.05.	A.5.b. Satisfied. Access to the existing operating fields is via the Dalton Highway and is controlled at security checkpoints. The Nuiqsut Spur Road is located to the south of the Putu 2 location. Access to the well site, generator ice pad, and encapsulated power cord will be closed to the general public for purposes of safety and confidentiality. Site visits by government agency personnel for purposes other than impromptu inspections should be arranged through the CPAI Exploration Field Environmental Coordinator (phone number 907-659-7217). This project will not be located such as to block access to or along navigable or public waters.
6. Prehistoric, Historic, and Archeological Sites	

a. Prior to the construction or placement of any structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological 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.6.a. Satisfied. A cultural resources study for site clearance was conducted in July and August of 2017 by Reanier & Associates, Inc. to assess any known sites, and to locate currently unknown sites. The records review includes the Alaska Heritage Resources Survey (AHRS) database, maintained by the Office of History and Archaeology within the ADNR; and the Traditional Land Use Inventory (TLUI) database, maintained by the NSB. The ice roads and the ice pads, will only be constructed in areas which have been cleared for archaeological/cultural resources. Village leaders from Nuiqsut will be consulted and a request for NSB TLUI clearance will be submitted. A request for clearance is being submitted to the Alaska State Historic Preservation Office (SHPO) along with the permit applications. Cultural or archaeological resources are not expected to be affected by this project.
b. The inventory of prehistoric, historic, and archeological sites must be submitted to the Director, and to SHPO who will coordinate with the NSB for review and comment. If a prehistoric, historic, or archeological site or area could be adversely affected by a lease activity, the Director, after consultation with SHPO and the NSB, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.	A.6.b. Satisfied. A cultural resources study for site clearance was conducted in July and August of 2017 by Reanier & Associates, Inc. to assess any known sites, and to locate currently unknown sites. The records review includes the Alaska Heritage Resources Survey (AHRS) database, maintained by the Office of History and Archaeology within the ADNR; and the Traditional Land Use Inventory (TLUI) database, maintained by the NSB. The ice roads and the ice pads, will only be constructed in areas which have been cleared for archaeological/cultural resources. Village leaders from Nuiqsut will be consulted and a request for NSB TLUI clearance will be submitted. A request for clearance is being submitted to the Alaska State Historic Preservation Office (SHPO) along with the permit applications. Cultural or archaeological resources are not expected to be affected by this

	project.
c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee must report the discovery to the Director as soon as possible. The lessee must make reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the Director, after consultation with the SHPO and the NSB, has directed the lessee as to the course of action to take for its preservation.	A.6.c. Satisfied. Should any sites or objects of prehistoric, historic, or archeological significance be discovered, the find will be reported to the Director of SHPO and the NSB and reasonable efforts made to preserve the site or objects.
7. Local Hire, Communication, and Training	

a. Lessees are encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease area. Lessees shall submit, as part of the plan of operations, a proposal detailing the means by which the lessee will comply with the measure. The proposal must include a description of the operator's plans for partnering with local communities to recruit, hire and train local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.	A.7.a. Satisfied. CPAI is committed to continuing its partnership with local contractors and business in the construction of the proposed project through competitive bid contracting opportunities. When reasonably foreseeable to do so, CPAI is committed to hire and where appropriate, to provide training to Kuukpik Shareholders, Nuiqsut residents, and Alaska Natives. When appropriate, local resident hire will be coordinated through the Kuukpik employment coordinator to identify and place qualified individuals interested in working on the project. In addition, CPAI and its contractors assist with scholarships, career training and internship opportunities to further expand local workforce capabilities and ensure that local residents are hired and retained as CPAI's employment requirements increase.
b. A plan of operations application must describe the lessee's past and prospective efforts to communicate with local communities and interested local community groups.	A.7.b. Satisfied. CPAI has dedicated community relations resources focused on providing project information to Nuiqsut, the closest community to the North Slope operations. CPAI will contacted the Native Village of Nuiqsut, Kuukpik Corporation, and the City of Nuiqsut with the project description and maps of the project area as part of the NSB TLUI cultural clearance procedure.
c. A plan of operations application must include a training program for all personnel including contractors and subcontractors. The program must be designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job. The program must use methods to ensure that personnel understand and use techniques necessary to preserve geological, archeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.	A.7.c. Satisfied. CPAI requires all North Slope employees and contractors to complete an 8-hour unescorted training program established by the North Slope Training Cooperative (NSTC). All employees receive a Field Environmental Handbook and the Alaska Safety Handbook. The unescorted training includes review of the Alaska Safety Handbook, and sections on personal protective equipment, camps and safety orientation, hazards communication, HAZWOPER Level 1, and Environmental Excellence. Additional NSTC curriculum includes specialized training in hydrogen sulfide, hearing conservation, electrical safety, respiratory protection, energy isolation, confined

	space entry, asbestos awareness, fall protection, toxic substance control, benzene, NORM, formaldehyde, and first aid/CPR.
8. Definitions	
a. In this document: i. "Facilities" means any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps and buildings; ii. "Important wetlands" means those wetlands that are of high value to fish, waterfowl, and shorebirds because of their unique characteristics or scarcity in the region or that have been determined to function at a high level using the hydrogeomorphic approach; iii. "Minimize" means to reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction; iv. "Plan of operations" means a lease Plan of operations under 11 AAC 83.158 and a unit Plan of operations under 11 AAC 83.346; v. "Practicable" means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard; vi. "Secondary containment" means an impermeable diked area or portable impermeable containment structure capable of containing 110 percent of the volume of the largest independent container plus 12 inches of freeboard. Double walled tanks do not qualify as Secondary Containment unless an exception is granted for a particular tank. vii. "Temporary" means no more than 12 months.	

APPENDIX C: OTHER

Land Ownership - The surface location of the Putu 2 exploration program is owned by the Kuukpik Corporation. CPAI has a surface use agreement with Kuukpik Corporation and will be working with them closely for this exploration program. The subsurface is jointly owned by the state of Alaska and Arctic Slope Regional Corporation.

Native Allotment – There is a Native Allotment (AKFF 011723) southwest of the proposed drilling ice pad boundary located in T10N, R5E, Section 16 and 17. The proposed drilling ice pad southern boundary (located in T10N, R5E, Section 9, zoned NSB Alpine Resource Development) is at least 2,600 feet from the Native Allotment northeast boundary. CPAI obtained a Revocable Use Permit (RUP) from the allotment owners through the Inupiat Community of the Arctic (ICAS) in 2016 and the RUP is effective for the 2017/2018 exploration drilling season. See the project overview map for further details.

Nuiqsut Natural Gas Pipeline – The Nuiqsut Natural Gas Pipeline (ADL 416202) runs parallel to the Colville River and Putu Channel. The gas pipeline is more than a quarter of mile from the Putu 2 ice pad. CPAI does not anticipate the proposed exploration activity to cross the Nuiqsut Pipeline.

Local Hire & Community Relations - The CPAI employment process places a priority on local hire. The intent of the process is to search for competitive local candidates. This includes: posting the ConocoPhillips Job Posting; notifying the Alaska Job Service of vacancies; maintaining a network of Alaska community organizations which receive notices of vacancies; and recruiting at local universities and advertising via social media. The state of Alaska also posts CPAI employment opportunities on their web site.

CPAI will hire a dedicated subsistence representative for the Putu 2 project and will provide CPAI village liaison representation in Nuiqsut during the project duration.

CPAI will be coordinating a job fair in Nuiqsut in November 2017. Contractors working on the Putu 2 project will be encouraged to attend the job fair. Local Nuiqsut residents will be recruited to be subsistence representatives and ice road monitors for the Putu 2 project. CPAI will conduct public meetings to help keep the local residents informed of CPAI's planned exploration activities. In the table below lists meetings CPAI has presented to regulatory agencies and communities.

Public Involvement - CPAI will conduct public meetings to help keep the local residents informed of CPAI's planned exploration drilling activities. The table below provides a list of stakeholder engagement meetings.

Stakeholder Engagement Meeting

Type of Meeting	Date	Location
State Pre-Application Meeting – ADNR DOG & NSB	October 30 & 31, 2017	Anchorage & Utgiagvik, AK
NSB Planning Commission	November 16, 2017	Utgiagvik, AK
Agency Permit Application Submittal	November 2, 2017	N/A
Nuiqsut Community Meeting	November 1, 2017	Nuiqsut, AK

Finally, the permitting actions associated with these exploration activities will be public noticed as required by agency specific regulatory programs. This action will provide opportunities for public input and involvement.

Responsible Party Contact Information - A CPAI representative will be on site at all times during operations. Twenty-four-hour phone service will be available at the drilling camp. Also, CPAI maintains 24-hour security coverage at the CPAI Tower in Anchorage. Personnel on duty are trained to handle incoming emergency calls. The front desk phone number at the CPAI Tower is 907-276-1215. The following personnel are designated as contacts:

Responsible Contact Information

Name	Title	Company	Phone	Home/Cell
Johnson Njoku	Drilling Team Leader	CPAI	263-4624	317-1529
David Lee	Drilling Engineer	CPAI	263-3741	231-7613
Sarah Kenshalo	Environmental Permitter	CPAI-ANC	265-1550	632-5381
Mike Hauser/Mary Mae Aschoff	Exploration Field Environmental Coordinator	CPAI-Kuparuk	659-7217	943-0134
Donnie Lutrick/ Dave Burley	Field Drilling Supervisors	CPAI	670-4763	N/A

2017-2018 Equipment List

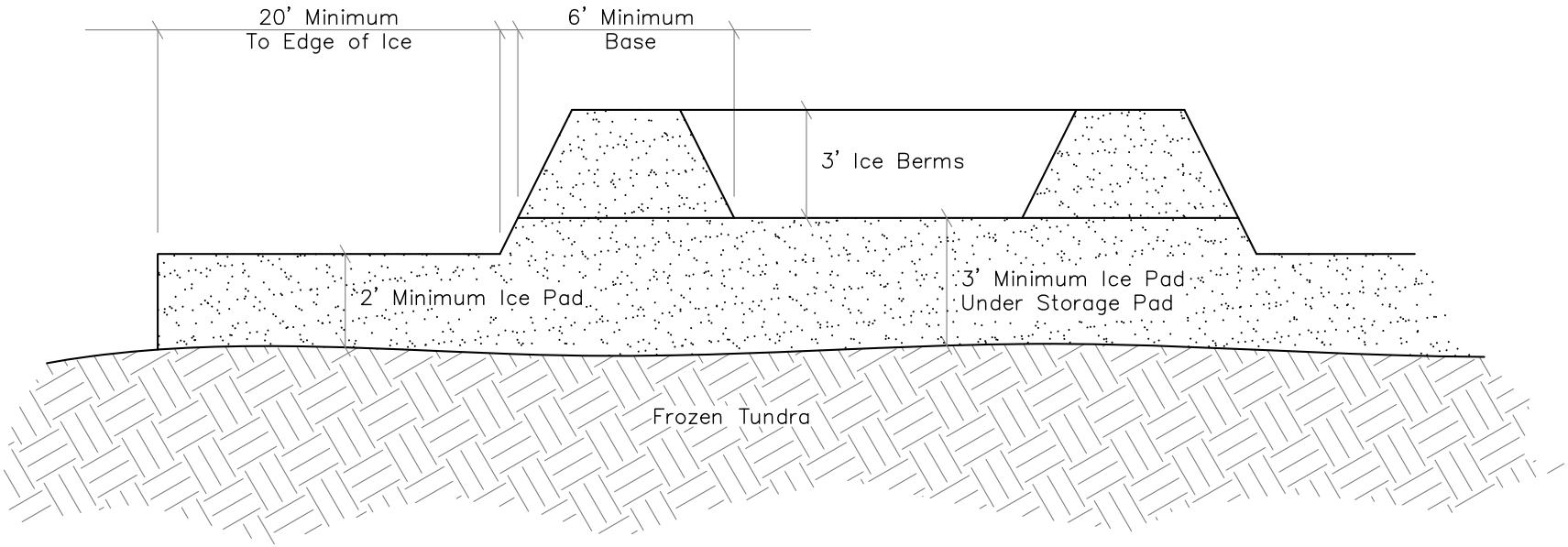
- **Well Testing Equipment**
  - Expro Flow back unit
  - 4 x 400 bbl upright tanks
  - 7 x 570 bbl tanks
  - 1 x 100 bbl Sand (Relief) Tank
  - 1 Genset/Air Compressor
  - 1 x Lab
  - 1 x Choke House
  - 1 x Glycol Boiler
  - 1 x Hose Connex
  - 1 x Sand Separator
  - 1 x Vertical Gas Scrubber
  - 1 x Tool House
  - 4 to 6 mobile light plants
  - 2 to 3 25 KW Generators
  - 8 to 10 mobile heaters
  - 1 x Flare Stack (90')
  - 1 to 2 Fuel trucks
  - 3 to 5 trucks to transport crude
  - 8 to 15 pick –ups/trucks
  - 1 x Crane
  - 1 x Slickline unit
  - 1 x Coil Tubing Unit
  - 1 x Nitrogen pumping unit
  - 1 x E-line logging unit
  - 1 to 2 300 bbl vac trucks

- **Estimated Equipment List Ice Road Construction**

  Crew #1

  - 1 ea. 140 bbl. Volvo Water Wagon
  - 1 ea. 16G Motor Grader
  - 1 ea. Volvo A35 Rock Truck (25 cy)
  - 2 ea. 966 Loader
  - 3 ea. Maxi Hauls (30 cy) w/ Truck
  - 3 ea. 150 bbl. Water Truck
  - 1 ea. Fuel Truck
  - 1 ea. Trimmer
  - 1 ea. Mechanics Truck
  - 1 ea. Overhead Pump
  - 3 ea. Pickup
  - 1 ea. 15 Passenger Van/Bus
  - 1 ea. Ice Road Van/Parts Connex
  - 2 ea. Heater
  - 3 ea. Light Plant
  - Rolligon

- **Drilling Equipment**
    - 2 to 4 snowmachines for surveying
    - Haaglund/Tuckers for surveying
    - Conductor drilling rig
    - Cementing pumping unit
    - 1 to 2 Welding trucks
    - 1 to 2 cranes
    - Drilling Rig- Kuukpik 5
    - 10 to 15 pick-ups/vans
    - 2 to 4 bed trucks
    - 2 to 4 300 bbl. vac trucks
    - 1 to 2 supersuckers
    - Cementing pumping unit with product silos
    - Hot oil displacement/pumping unit
    - Mudlogging shack- shown on the as-built
    - Mud lab
    - E-line logging unit
    - lWD/MWD shack
    - 2 to 3 Sows or large trucks for moving the rig modules
    - 1 to 2 cats for assisting with rig moves
    - 2 to 4 325 bbl. water trucks
    - 1 to 2 winch trucks
    - 4 to 8 mobile light towers
    - 4 to 8 mobile heaters
    - 1 to 2 backhoes/excavators
    - 2 to 4 pump houses for water extraction form lakes
    - 1 to 2 Fuel trucks
    - 1 to 2 Greywater/Blackwater trucks servicing the camps
    - Enclosed flare
    - Air Monitor Station
- **Stallion Rig Camp RC34**
    - 12,000-gallon waste water tank
    - 2 each 2,500 potable water tanks in heater skidded module
    - 6,000-gallon diked Diesel Fuel tanks
    - Back-up Generator
    - Smoke Shake
    - Dumpster



LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

FORM: AsizeL-3L-Title

REV. NO.	CUST APP	DATE	REVISIONS	BY	CHK	JOB ENGR	PROJ ENGR

ConocoPhillips Alaska, Inc.

APPROVAL: _

DATE: 11/20/2012 JLS

PROPOSED
Drill Cuttings Storage Area
(Typical)

DRAWING NO. NSK 6.10-d65

PART: 1 of 1

REV: 0

ConocoPhillips

POLAR BEAR AVOIDANCE AND INTERACTION PLAN

July 2016

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LIST OF ACRONYMS

AAC	Alaska Administrative Code
ACS	Alaska Clean Seas
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
CFR	Code of Federal Regulations
CPAI	ConocoPhillips Alaska, Inc.
ESA	Endangered Species Act
FEC	Field Environmental Coordinator
FLIR	Forward Looking Infrared
FR	Federal Register
HSE	Health, Safety, and Environmental
ITR	Incidental Take Regulations
LOA	Letter of Authorization
MMM	Marine Mammals Management (Office, USFWS)
MMPA	Marine Mammal Protection Act
NSB	North Slope Borough
NW	northwest
Plan	*Polar Bear Avoidance and Interaction Plan*
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WSW	west-southwest

ACKNOWLEDGMENTS

The preparation of this Planning document has been refined and updated over the years with contributions from many individuals. During the initial creation of this document, senior technical expertise was ably provided by Geoff York, United States Geological Survey (USGS) Biological Research Division, and Craig Perham and Christopher Putnam, United States Fish and Wildlife Service (USFWS) Marine Mammal Management (MMM) Office. The input provided by all parties mentioned above is greatly appreciated.

1.0 PURPOSE AND SCOPE

The main purpose of the *Polar Bear Avoidance and Interaction Plan* (Plan) is to provide guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working at North Slope facilities where polar bears (*Ursus maritimus*) or their dens may be encountered. Oilfield activities have the potential to disturb wildlife species during important life cycle events. To minimize disturbance, CPAI has developed a multitude of planning documents, Standard Operating Procedures, and training requirements for all personnel. The polar bear presents a potential serious risk of injury to field personnel. To protect the safety of personnel, and polar bears, North Slope workers should avoid encounters with polar bears and their dens whenever possible. Should such an encounter occur during the performance of work, this Plan provides guidance to enhance personnel safety and minimize the effect of the disturbance.

The Plan includes the following information:

- Training requirements for all CPAI employees and contract personnel working on the North Slope (Section 3.0).
- Roles and responsibilities of key personnel (Section 4.0).
- Procedures for avoiding and detecting polar bears (Section 5.0).
- Description of the polar bear alert system, deterrence, and reporting method (Section 6.0).

This Plan supports compliance with the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) regulations as well as various project permit conditions concerning protection and monitoring of polar bears. This Plan is one component of CPAI's overall wildlife management program. This Plan has been prepared as a separate document from CPAI's *Wildlife Avoidance and Interaction Plan* (CPAI, 2015) due to the federal protection afforded polar bears and the significant risks and dangers associated with an encounter between humans and bears

Table 1 lists the documents and information sources included in CPAI's wildlife management program that pertain to polar bears.

Table 1 Wildlife Management Program Documents for Polar Bear Avoidance and Conservation Policies and Procedures

Document/Information Source	Pertinent Information
Polar Bear Avoidance and Interaction Plan (this document)	• Polar bear detection and avoidance techniques • Guidance for complying with federal polar bear regulations (Marine Mammal Protection Act) and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
North Slope Wildlife Training Module	• Describes laws and regulations • Explains predator and waste management procedures • Employee responsibilities regarding wildlife interactions • Detection and avoidance of polar bear dens
Deterrence Training	• Specific to personnel that are engaged in hazing or deterrence activities (polar bear watch designees, Security staff) • Classroom training • Training in use of deterrence methodologies such as cracker shells, bean bags, etc. • Training is done by federal and/or state wildlife biologists or others (e.g., Security) appropriately trained
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI and contractor safety meetings (e.g., pre-spud, daily tailgate, etc.) • Environmental alerts (issued throughout camp at the onset of winter field season to heighten awareness of workers on polar bear avoidance measures)

2.0 LAWS AND REGULATIONS

Several regulatory requirements, permits and CPAI policies are applicable to the wildlife management program. These include, but are not limited to:

Applicable State Regulations

- 18 Alaska Administrative Code (AAC) 60.010 – Treatment of solid waste
- Armed Guard License (Security guards only)

Applicable Federal Regulations

- Endangered Species Act (ESA) – On May 15, 2008, the USFWS published a Final Rule in the Federal Register (73 FR 28212) listing the polar bear as a threatened species under the Endangered Species Act.
- Marine Mammal Protection Act (MMPA) – Polar bears are protected by the 1972 MMPA, as amended November 2001 (16 USC 1361-1407). The MMPA explicitly states that it is illegal to "harass, injure, capture, kill or to attempt to harass, injure, capture, or kill" a marine mammal. The term used to describe any of these activities is "take". However, Section 101(a)(5)(A) of the MMPA includes an exception to the law by authorizing the issuance of regulations to allow the incidental, but not intentional, taking of small numbers of marine mammals, upon request for a specified activity in a specified geographic region. Industry petitions the federal government to promulgate regulations to allow for incidental take (referred to as Incidental Take Regulations or ITRs) of marine mammals every five (5) years. These regulations are important for the continued operation of oil and gas activities where polar bears may be encountered.

CPAI Policies, Procedures, and Permits/Approvals

- Non-Interference Policy, Section 6 of the *North Slope Environmental Field Handbook*
- United States Army Corps of Engineers (USACE) Permits (I.E., Section 404 permits)
- Land Use Permits (typically issued by the Alaska Department of Natural Resources [ADNR] and North Slope Borough [NSB])
- Hazing permits (issued by the Alaska Department of Fish and Game [ADFG])
- Letters of Authorization (LOA) (issued by the USFWS) – Oil and gas operators may submit letters to USFWS requesting an incidental take exemption to conduct specified activities (e.g., exploration, development, production, etc.). The USFWS may then issue LOAs to the applicant, pursuant to the ITRs noted in the

above section under the MMPA description. LOAs describe specific stipulations and monitoring requirements for each applicant and have varying effective periods. CPAI applies to the USFWS for two types of LOAs that may grant intentional or incidental (unintentional) take.

3.0 TRAINING REQUIREMENTS

All CPAI and contractor personnel working on the North Slope on a regular rotation will complete the North Slope Wildlife Awareness training module once every two years.

Field Environmental Coordinators (FECs) regularly attend CPAI and contractor safety meetings, pre-spud meetings, and pre-construction meetings to reinforce the importance of proper food management to prevent attraction of predator species, including polar bears, to our facilities.

General awareness training is provided annually to all personnel using environmental alerts and updates, safety bulletins, safety meetings, and the training modules as appropriate. Select personnel are required to attend a Deterrence Training Program approved by the Alaska Department of Fish and Game (ADF&G) and/or the USFWS. The class consists of classroom information covering polar bear behavior, biology, and hazing techniques, as well as hands-on hazing and deterrence techniques using actual equipment. Staff with this specialized training typically includes security personnel, survey contractors, and Alaska Clean Seas (ACS) staff in remote locations.

4.0 ROLES AND RESPONSIBILITIES

The key personnel and their responsibilities with regard to CPAI's general wildlife management program are as follows:

Environmental Studies Coordinator – Manages the overall environmental studies program, manages all company wildlife plans, and is the primary point of contact with agency wildlife regulators.

Field Environmental Coordinator (FEC) – Oversees spill prevention, reporting, and cleanup; coordinates tundra travel, waste management, wildlife interaction, and environmental management systems.

ACS Technicians – Oversee wildlife hazing, capture, and stabilization during an oil spill response.

Security – Has overall responsibility for wildlife hazing and monitoring during routine oilfield operations in oilfields. Security responds to wildlife sighting and interaction reports as appropriate.

All Personnel – Responsible for participating in wildlife interaction and management training. All personnel *must*:

- Complete the wildlife training requirements for all CPAI employees, contractor personnel, and unescorted visitors prior to their work in the North Slope oilfields.
- Review Section 6 of the *North Slope Environmental Handbook* and comply with CPAI policy regarding wildlife.
- Immediately report polar bear interactions to Security and their Supervisor and/or the FEC.

This Plan will be updated on an as-needed basis. This document and all other wildlife interaction documents are maintained by the Environmental & Permitting group of ConocoPhillips Alaska. Copies of these plans are available to the environmental coordinators for use in training North Slope field personnel prior to conducting winter work. Additional training on avoidance and reporting may be given to crews operating in or near potential polar bear habitat during the winter.

5.0 POLAR BEAR EARLY DETECTION AND AVOIDANCE PROCEDURES

Early detection and avoidance procedures for polar bears are generally the same for all of the oilfield activities. While human safety is the top priority, it must be emphasized that early detection and avoidance procedures are designed to prevent encounters that might also result in harm to a polar bear.

It is the responsibility of each worker to be aware of his/her surroundings and inspect the work area before leaving a vehicle or building. As a precautionary measure, personnel should have a heightened awareness about the potential for encounters with polar bears within the oilfields and proposed exploration areas. All CPAI and contractor field personnel should understand and follow the detection and avoidance procedures outlined below.

- Outdoor working personnel must maintain either radio or visual contact with Security so that they can be immediately alerted in the event a polar bear is sighted.
- Personnel with work assignments that require they be outside of areas secure from polar bears (buildings, heavy equipment cabs, etc.) should check directly with Security for the latest information on polar bear sightings in their work area.
- All personnel should use the buddy system when working outdoors during winter construction, exploration, and operations activities. If necessary, a polar bear watch may be designated to monitor the work site after consulting with a Supervisor and Security.
- Truck drivers should sweep their headlights around work areas or use portable light plants to look for polar bears before exiting their trucks.
- If possible, drill site personnel should park their vehicles at a well house for protection if a polar bear is sighted.
- Heavy equipment operators (using forklifts, loaders, etc.) working from inside protective vehicle cabs are well situated to visually detect bears and sound the alert in the event a polar bear is discovered within the site.
- Personnel should check behind doors prior to exiting stairs, access areas, and under structures to be sure no bears are present before moving to or from these areas.
- Beyond the illuminated drill site pad areas, all personnel must exercise special alertness if conditions are dark and there is poor visibility.
- **Notify Security of all polar bear sightings** (see Section 6.0 for details).

5.1 Infrastructure Design and Maintenance

Infrastructure associated with oilfield development can potentially provide denning or cover for polar bears. The following are some examples of infrastructure design and maintenance activities that can help minimize the attraction of polar bears:

- The design of the infrastructure at any site should incorporate features to reduce the attractiveness of the site to bears as appropriate (e.g., installation of skirting under elevated buildings, visual aides [mirrors, proper lighting], capping of large diameter pipes stored onsite, and placement of gates or other barriers on stairwells). For facilities located adjacent to the coast, the installation of a gated enclosure outside the exit door (similar to West Dock and Oliktok Point) should be considered to minimize the likelihood of encounters between humans and bears.

- Elevated structures, including roads and pads, can collect drifting snow that can serve as artificial denning habitat if not properly managed. The prevailing wind is from the northeast, and the direction of drifting should be taken into account when placing barriers or storing materials.

- If materials must be stored outdoors, they should be arranged either very close together or very wide apart to minimize the space where bears could hide.

- Personnel areas, including all entrance areas, must be illuminated during working hours of darkness.

5.2 Handling Food Materials and Waste

Particular care will be taken to ensure that no food wastes are left in places that might attract polar bears. Taking food into vehicles is discouraged, but if food must be taken into vehicles for remote operations (from camp), it must be stored in containers that minimize odors, such as plastic bags or plastic containers with lids. All food waste must be brought back to the appropriate disposal receptacle, and all garbage, including used food containers, will be removed from the vehicles at the end of each shift.

The cleanliness of the project area must be strictly maintained, and eating outside buildings or vehicles is prohibited. These food waste disposal practices should ensure that no bear attractants are present.

5.3 Handling Non-Food Materials and Waste

Although the main food sources of polar bears are marine mammals such as ice seals, non-food materials (e.g., plastic, rubber, motor oil, and chemicals such as antifreeze) have attracted bears in the past. If these materials are not handled properly, they can increase the likelihood of polar bear encounters. Potentially harmful materials will be labeled appropriately and stored in secure containers (e.g., 55-gallon steel drums) or inside secure buildings and they will be properly disposed of away from the project area.

5.4 Den Detection and Avoidance

Avoidance of active maternal denning locations is standard operating procedure during winter work and travel activities. Den selection by pregnant sows can occur during late November through mid-December. CPAI will engage with USFWS MMM personnel to identify potential den survey locations and protocols in advance of proposed winter activity. On the basis of these discussions, CPAI will engage trained observers to conduct aerial surveys from a fixed wing aircraft or other aerial platform using the Forward Looking Infrared Radar (FLIR) or some other method approved by USFWS over the proposed work area. This is typically done in early December. If USFWS or USGS biologists cannot accompany the crew, the flight tapes will be provided to these agencies for review.

If a survey detects a bear den, the procedures cited below may be followed if the den is near infrastructure or project activity:

- Review nearby project descriptions, including timelines and locations for construction of ice roads and infrastructure.
- Consider modification of any air traffic patterns, as human safety allows, to avoid flying over the den.
- Initiate den monitoring activities as practicable. Continue to monitor via agreed-upon tactics with USFWS.
- Communicate on a routine schedule (agreed upon through discussions with Service personnel) on the status of the den site(s) and/or polar bear(s).
- If/when a bear emerges, monitor the bear(s) activity and provide daily updates to USFWS.

The USFWS mandates that a one-mile buffer be placed around known maternal dens to limit disturbances to the sow and cub(s) caused by activity.

In some instances, even though den survey activities were conducted, a polar bear den may not have been identified and a polar bear(s) may emerge in the spring (March through April). Once a bear den is encountered in the field, it becomes a “known” den and all provisions of the LOA apply immediately. When a polar bear(s) emerges from an unknown den located less than one mile from activities, activities must cease until a site-specific Mitigation and Monitoring Plan is implemented by CPAI and USFWS.

The Field Environmental Coordinator or Environmental Studies Coordinator will contact the USFWS immediately to report the bear(s) emergence from the unknown den and to initiate discussions on protocols to be followed. The Mitigation and Monitoring Plan will be prepared as soon as possible to minimize disturbance to the bear(s) while allowing for activities to potentially proceed.

6.0 POLAR BEAR ALERT SYSTEM, DETERRENCE, AND REPORTING

The Notification Flow Chart (Appendix A) lists the actions to be taken when: a) a polar bear is sighted, b) a bear remains in the area, and c) a lethal take occurs. Also included in the flow chart are the appropriate contact persons and their contact information. Actual polar bear sightings will be recorded on a *Polar Bear Sighting Form* (Appendix A). If there is the potential for a life-threatening interaction, Section 101(c) of the MMPA allows, without specific authorization, the take (including lethal) of a polar bear if such a taking is imminently necessary in self-defense or to save the life of a person in immediate danger and such taking is reported to the USFWS within 24 hours.

6.1 Polar Bear Alert System and Reporting

The primary source of polar bear sighting information will come from personnel conducting routine activities in the oilfields. Should a bear or bear sign (e.g., tracks or scat) be discovered within the vicinity of work areas, camp buildings, or storage locations, the observer must immediately report the sighting to his/her Supervisor and Security once refuge has been sought in a secure location. Personnel should not remain in an exposed position in order to locate the bear.

When a bear is sighted near a work area, Security will initiate the alert system, which is provided by radio contact (personnel working outside will carry hand-held portable radios). All personnel will be alerted to go immediately to pre-identified secure areas. Secure areas include buildings (except for warm-up shacks and other light structures) and cabs of large trucks or other heavy equipment. If only a pickup or other similar size vehicle is available, personnel should drive the vehicle at least 50 yards away from the bear and keep the engine running while observing the bear's behavior. No one should attempt to photograph a bear.

The alert will consist of voice communication, which will provide specifics on the location of the bear, instructions for who must evacuate, and evacuation instructions. The presence of a bear(s) will be announced to all personnel in this fashion so that appropriate avoidance measures are taken. Only when it has been determined by subsequent inspection that bears are no longer present in the work vicinity will the alert be lifted.

After the pertinent alerts have been issued, and all personnel are safe, the following steps will occur to notify USFWS of the event.

Security will verify the polar bear sighting and complete a *Polar Bear Sighting Form* in the field. Security should contact the respective FEC staff for any questions concerning completion of the form. An example of how to complete the "encounter description" section of the form would be: "Sighted two polar bears approximately 500 yards west-southwest (WSW) of location walking in a northwest (NW) direction. Stopped to sniff air three times and continued walking."

If a designated Polar Bear Watch is on duty when a bear is sighted, that person will be responsible for filling out the *Polar Bear Sighting Form* (rather than Security). The

designated Polar Bear Watch must give the completed *Polar Bear Sighting Form* to security for reporting purposes. The FEC then transmits the sighting notification to: USFWS Marine Mammals Management, and, for information only (not a regulatory requirement), ADF&G Wildlife Conservation Division (see Appendix A).

An annual polar bear observance monitoring report will be submitted by the appropriate FEC staff to the USFWS by **December 15th**. Sightings observed during the last two weeks of December shall be provided as an addendum to the above report and submitted to USFWS as soon as possible.

6.2 Polar Bear Deterrence and Reporting

In the event that a bear must be deterred, CPAI is permitted by Letters of Authorization (LOAs) to haze polar bears (see Appendix A-2.1.1). Only trained personnel should undertake hazing or deterrence actions to move bear(s) away from work areas. Hazing policies and procedures are discussed in Appendix B. Whenever possible, Security will notify the FEC in advance of any polar bear hazing or deterrence activities. Pre-notification would not be feasible in a situation where deterrence is required immediately for the protection of personnel or bears.

Security staff will follow the same reporting procedures detailed in Section 6.1 to report hazing events. Polar bear harassment/hazing events are to be reported to USFWS MMM Office within 24 hours.

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Appendix A
Notification Procedures and Forms

Notification Flow Chart

No work should be conducted within 1 mile of a known den.

Polar Bear Sighting
(includes signs of polar bears, tracks, digging, etc).

Observer reports sighting to **Security** by phone.
Alpine (907) 670-4002
Kuparuk (907) 659-7997

Security completes a *Polar Bear Activity/ Sighting Form* and submits report to **FEC.**
Alpine (907) 670-4200
Kuparuk (907) 659-7212

FEC submits completed form to **USFWS Marine Mammal Management Reporting email** and to **Dick Shideler** at **ADF&G.**

Polar Bear Remains within Work Area

If active deterrence is necessary, trained **Security** personnel will be contacted to take action. If possible, the **FEC** will notify **USFWS** prior to hazing.

Security notifies the **FEC** by phone that action has been taken.
Alpine (907) 670-4200
Kuparuk (907) 659-7212

Security prepares report on the deterrence activities, including a map of bear location(s) and provides the report to **FEC.**

FEC submits completed form to **USFWS Marine Mammal Management Reporting email** and to **Dick Shideler** at **ADF&G.**

Polar Bear Den Discovered within 1-mile of work area

STOP work activities contact **Security, FEC,** and **Supervisor.**

Security completes a *Polar Bear Activity/ Sighting Form* and provides report to **FEC.**
Alpine (907) 670-4200
Kuparuk (907) 659-7212

FEC IMMEDIATELY contacts **USFWS, Christopher Putnam** and submits form to **USFWS Marine Mammal Management reporting email.**

Security minimizes access to worksite, documents bear behavior, and provides report to **FEC** at end of each shift.

FEC calls **Christopher Putnam** or **Alternates** within 24 hrs for guidance on resumption of activities.

FEC advises Operations on **USFWS** recommendations.

Lethal Take of Polar Bear

Security or the **FEC** will contact by phone:

1) Christopher Putnam (USFWS)
Work (907) 786-3844
Cell (907) 268-0577
If no answer, call:

2) **Kimberly Klein** (USFWS)
Work (907) 786-3621

3) Marine Mammals Management (USFWS)
(907) 786-3800
If no answer, call:

4) USFWS Law Enforcement
(907) 786-3311 office hrs
1-877-535-1795 24-hrs.

Security will record all details and witness accounts.

Security will protect entire bear carcass from scavengers.

Security will transport entire bear carcass to Deadhorse or as dictated by **USFWS.**

Dead or Injured Polar Bear
(unknown cause of death)

Observer reports sighting to **Security** by phone.
Alpine (907) 670-4002
Kuparuk (907) 659-7997

Security completes and submits a *Polar Bear Activity/Sighting Form* and a Level A Stranding Form to **FEC.**
Alpine (907) 670-4200
Kuparuk (907) 659-7212

FEC will submit report(s) to **USFWS Marine Mammals Management Reporting email** and contact **USFWS** for guidance and instructions.

Appendix B-2.0
Summary of Contact Information

ConocoPhillips Alaska

Alpine Facilities

Security: (907) 670-4002

Field Environmental Coordinator:

- Primary: (907) 670-4200
- Pager information: (907) 670-4930, pager 718
- Secondary: (907) 659-7242

ACS Lead Technician: (907) 670-4586

Pager Information: (907) 670-4930, pager 602

Kuparuk Facilities

Security: (907) 659-7997

Field Environmental Coordinator:

- Primary: (907) 659-7212
- Pager information: (907) 659-7000, pager 669
- Secondary: (907) 659-7242

ACS Lead Technician: (907) 659-7879

Pager information: (907) 659-7000, pager 801

Anchorage

Environmental Studies Coordinator

Robyn McGhee

(907) 265-1087(w)

(907) 529-1222 (cell)

Polar Bear Activity/Sighting Form

United States Department of the Interior
Fish And Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

POLAR BEAR SIGHTING REPORT

Company: _____ **LOA #:** _____
Date: _____ **Observer Name:** _____
Time: _____**am / pm / 24** **Phone/Email:** _____

Location: _____
_____

Latitude: _____ **Longitude:** _____ **Datum:** _____

Weather Conditions: Fog_____ Snow_____ Rain_____ Clear_____ Temperature_____°F / °C

Wind Speed_____ mph / kts Wind Direction (from)_____ N NE E SE S SW W NW

Visibility: Poor_____ Fair_____ Good _____ Excellent_____

Number of Bears: (total number of bears & how many of each type) **Total # Bears** _____

	adult	sub-adult	2 year-old	yearling	cub of year
Male	_____	_____	_____	_____	_____
Female	_____	_____	_____	_____	_____
Unknown	_____	_____	_____	_____	_____

Closest Distance of Bear(s): from personnel_____ facility_____ m / yd / ft

Bear Behavior (Initial Contact): curious ignore aggressive walk run swim hunt feed rest other _____

Bear Behavior (After Contact): curious ignore aggressive walk run swim hunt feed rest other _____

Description of Encounter: _____
_____
_____
_____

Duration of Encounter: _____ **Possible Attractants Present:** Y / N

Describe Attractants: _____

Deterrents Used & Distance: Y / N m / yd / ft

_____ Vehicle	_____ Crackershell	_____ Other (describe)
_____ Horn/Siren/Noise	_____ Rubber Bullet	_____
_____ Spotlight/Headlight	_____ Bean Bag	_____

Agency/Contacts:
USFWS Craig Perham (786-3810) (FAX: 786-3816) _____ Time _____ Date _____
ADF&G Dick Shideler (459-7283) (FAX: 459-7332) _____ Time _____ Date _____
Other _____ Time _____ Date _____

Appendix B

CPAI Polar Bear Hazing and Deterrence Policies and Procedures

CPAI Polar Bear Hazing and Deterrence Policies and Procedures

Training Requirements

All North Slope security officers and/or personnel assigned to perform bear guard duties will receive the appropriate training needed to properly uphold their roles and responsibilities. Only properly trained personnel are authorized to conduct polar bear deterrence and hazing activities. Designated hazers will be firearms qualified and familiar with the capabilities and limitations of the tools (e.g., hazers will practice with actual deterrents during training classes).

Only United States Fish and Wildlife Service (USFWS) Marine Mammals Management staff, or individuals approved in writing by USFWS will provide the classroom deterrence module training. Deterrence training for authorized hazers will occur, at a minimum, biannually. Deterrence and hazing training will include, at a minimum, the following:

- Regulatory background (e.g., review of Marine Mammals Protection Act, Endangered Species Act, and associated definitions) - annually.
- Review of the polar bear interaction plan - annually.
- Biology and behavior of polar bears and preventing bear conflicts - biannually.
- Hazing and deterrence principles, techniques and limitations - biannually.
- Accountability and reporting requirements of hazers - biannually.
- Identification of and field training with deterrent and lethal rounds - biannually.

Steps of Progressive Deterrence and Hazing

Any type of deterrence or hazing must be permitted by a Letter of Authorization for intentional take of polar bears, and should be conducted only as a last measure when needed to prevent escalation of an encounter and to ensure the safety of people and wildlife. If a bear is present at a work site but all personnel are able to retreat indoors to safety or otherwise leave the work site the bear shall not be hazed, regardless of hindrance of the progression of work activities. If altering the bear's behavior is the only way in which to ensure the safety of workers, the following steps of progressive deterrence and hazing will be followed:

1. Intimidate with size and movement – Position vehicle between bear and work area, shine headlights.
2. Startle with sound - Yelling, clapping, followed by horn honking, sirens, and finally cracker shells.
3. Non-lethal physical contact – Fire ammunition, such as a beanbag or fin-stabilized rounds, at bear.
4. Lethal contact – Fire lethal round at bear. This can only be used in defense of human life. Example scenarios include a charging bear leaving no avenue of escape for personnel, or a bear that has already attacked a person.

Ammunition Storage Inspection and Handling

Only the types of ammunition listed in the following table are authorized for bear hazing and are to be labeled and stored in containers as specified.

Type of Round	Type of Casing	Label	Manufacturer	**STORAGE CONTAINER** Label and Color
Shell Cracker	Transparent plastic	Explosive/Crimped shell nose	Stoneco, Inc/ Relabeled Northern Security Supply	"SHELL CRACKER" Orange
Bean Bag Round	Transparent plastic	CTS Super Sock/ Cardboard shell nose	Combined Tactical Systems/Super Sock	"BEAN BAG and/or FIN-STABLILIZED" Smoke Gray
Bean Bag Round	Light grey, not transparent	Ballistic System P/N 4020 Ballistic Baton	MK Ballistics System	
Fin-Stabilized Round	Transparent plastic	Fin Stabilized/Black rubber projectile visible at shell nose	Defense Technologies	
Lethal Round	Non-transparent plastic	Federal Rifled Slug/Lead shell nose	Federal	"LETHAL SLUGS" Forest Green
Lethal Round	Transparent plastic	Classic Magnum/Lead shell nose	Brenneke	

A maximum of twenty five rounds of each type of ammunition will be carried. The ammunition will be containerized as described in the table above. Containers will be inspected by the officer assigned to bear hazing duties at the beginning of each shift to verify the number and types of rounds in possession. Only lethal ammunition will be carried in a shotgun magazine (tube). If non-lethal rounds are to be used they will be loaded into the firearm immediately prior to discharge.

The preferred practice for ammunition handling in the field will be to leave the rounds in their color-coded containers at all times. The firearm handler must always inspect each cartridge casing for color and text to verify which type of round is being loaded. Rounds should be loaded into the firearm directly from the box immediately before use. Carrying ammunition in different containers (i.e. coat pockets) should be avoided. If a situation arises where a hazer must carry ammunition out of the containers (such as they must walk to an area where the

vehicle cannot travel and the plastic containers cannot be brought with them) then ammunition may be carried in other manners although should remain segregated (i.e. different coat pockets or bags for different types of rounds). It is vital to know exactly what type of round is in the firearm at all times so that they are used appropriately.

Fire Arms Discharge Reporting and Evidence Retention

Any discharge of a firearm will be thoroughly documented and reported to the CPAI Field Environmental Coordinator (FEC). The FEC will make the appropriate notifications to USFWS as detailed in Section 6.0 of CPAI's Polar Bear Avoidance and Interaction Plan, as required by the Letters of Authorization issued to CPAI for the intentional take of polar bears.

Any recoverable materials including spent shell casings, bean bags, etc. will be collected and preserved in accordance with standard law enforcement evidence collection and chain of custody protocols. The evidence will be maintained for a period of sixty (60) days.

Additional Information

Any questions or clarifications should be directed to the Security Captain at Alpine (907-670-4003) or Kuparuk (907-659-7213).