



U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment

DOI-BLM-AK-R000-2018-0001EA

**ConocoPhillips Alaska, Inc.
700 G Street
Anchorage, Alaska 99501**

AA087852/AA093131/AA094422/FF097359

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LIST OF ACRONYMS

AAC	Alaska Administrative Code
ACEC	Area of Critical Environmental Concern
ACP	Arctic Coastal Plain
ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AHRS	Alaska Heritage Resources Survey
ANILCA	Alaska National Interest Land Conservation Act
AO	Authorized Officer
AOGCC	Alaska Oil and Gas Conservation Commission
APD	Application Permit to Drill
ASDP	Alpine Satellite Development Plan
BLM	Bureau of Land Management
BMP	Best Management Practice
BTU	Bear Tooth Unit
CPAI	ConocoPhillips Alaska, Inc.
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
CTU	Coil Tubing Unit
DLMW	Division of Mining, Land and Water
DO	Dissolved Oxygen
Ds-2P	Kuparuk drill site 2P pad
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FHPs	Fish Habitat Permits
FLPMA	Federal Land Policy and Management Act of 1976
GMTU	Great Mooses Tooth Unit
GMT1	Greater Mooses Tooth 1
GPR	Ground Penetrating Radar
GPD	Gallons Per Day
IAP	Integrated Activity Plan
IHLC	Inupiat History, Language, and Culture
IMT	Incident Management Team
LOA	Letter of Authorization
MG	Million Gallons
NEPA	National Environmental Policy Act
NPR-A	National Petroleum Reserve in Alaska
NPRPA	Naval Petroleum Reserves Production Act
NSB	North Slope Borough
NSTC	North Slope Training Cooperative
ODPCP	Oil Discharge Prevention and Contingency Plan

P&A	Plug and Abandonment
ROD	Record of Decision
ROW	Right-of-Way
SAP	Subsistence Advisory Panel
SEIS	Supplemental Environmental Impact Statement
SPCC	Spill Prevention Control and Countermeasure Plan
TLSA	Teshkepuk Lake Special Area
TLUI	Traditional Land Use Inventory
TWUA	Temporary Water Use Permit
USDOI	United States Department of Interior
USFWS	United States Fish and Wildlife Service
XBC	Canning Camp

Identifying Information

Title:

ConocoPhillips Alaska, Inc. 2017/2018 Exploration Project

Case File Number:

AA087852/AA093131/AA094422/FF097359

Timeframe:

December 1, 2017 – May 1, 2018

Environmental Assessment Number:

DOI-BLM-AKR000-2018-0001EA

Name and Location of Preparing Office:

Bureau of Land Management
Arctic District Office
222 University Ave
Fairbanks, Alaska 99709

Applicant Name:

ConocoPhillips Alaska, Inc.

Address:

700 G Street
Anchorage, Alaska 99501

Lands Involved:

Northeast National Petroleum Reserve - Alaska

Land Use Plans:

National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement (2012) and Record of Decision (2013).
The 2014 Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth One Development Project (2014) and Record of Decision (2015).

Chapter 1

1. Introduction

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) to disclose and analyze the environmental consequences of granting a Right-of-Way (ROW) and approving Application Permits to Drill (APDs) for activity proposed by ConocoPhillips Alaska, Inc. (CPAI). The Bureau of Land Management (BLM) follows the procedures contained in the agency's NEPA handbook (H-1790-1), which was issued January 2008.

CPAI has applied for permits and/or posted notices to access and drill on valid oil and gas leases during a 1-year winter exploration program in the National Petroleum Reserve-Alaska (NPR-A). The Applicant has submitted permit applications ([Table 1.1](#)) to Federal and State agencies and the North Slope Borough (NSB), including the BLM ROW application (FF097359) and APDs ([See Table 2.2 for APD Case File Numbers](#)). A ROW application was submitted on September 18, 2017, by the Applicant to the BLM Arctic District Office and assigned case file number FF097359. All applicable application documents for a complete application were received by October 11, 2017. The description of the proposed action ([Section 2.1](#)) provides details of the activity that would be conducted if the ROW and APDs were to be granted/ approved.

CPAI has identified six potential locations for the 2017-2018 exploration program. Three of the proposed drill sites are located in the Greater Mooses Tooth Unit (GMTU) in the NPR-A held by CPAI, in part with Anadarko Petroleum Company, under BLM jurisdiction. One is located within the Bear Tooth Unit (BTU), and two are located in non-unit areas of the NPR-A. The proposed drilling lies entirely within the NPR-A and within the boundaries of the NSB. CPAI may also plug and abandon (P&A) one or more existing exploration wells within the BTU area. Known traditional land use sites (e.g., cabins and campsites) are avoided. The BLM does not authorize use of private property, and access across private lands requires authorization of the landowner.

1.1 Need for the Proposed Action

The need for the proposed action is for the BLM to fulfill its directive under the Naval Petroleum Reserves Production Act of 1976, as amended and the Energy Policy Act of 2005, to regulate oil and gas activity within the NPR-A. The project is needed to provide detailed information regarding potential reserves of oil and gas within the NPR-A. A primary need for the project is implicit in the worldwide demand for oil and gas that is accompanied by concern in the United States over dependence on foreign oil supplies and associated stability. The project is needed to supplement the diminishing North Slope oil supplies and maintain the efficiency of the Trans-Alaska Pipeline System. Revenues from production are needed to support local, state, and national economies.

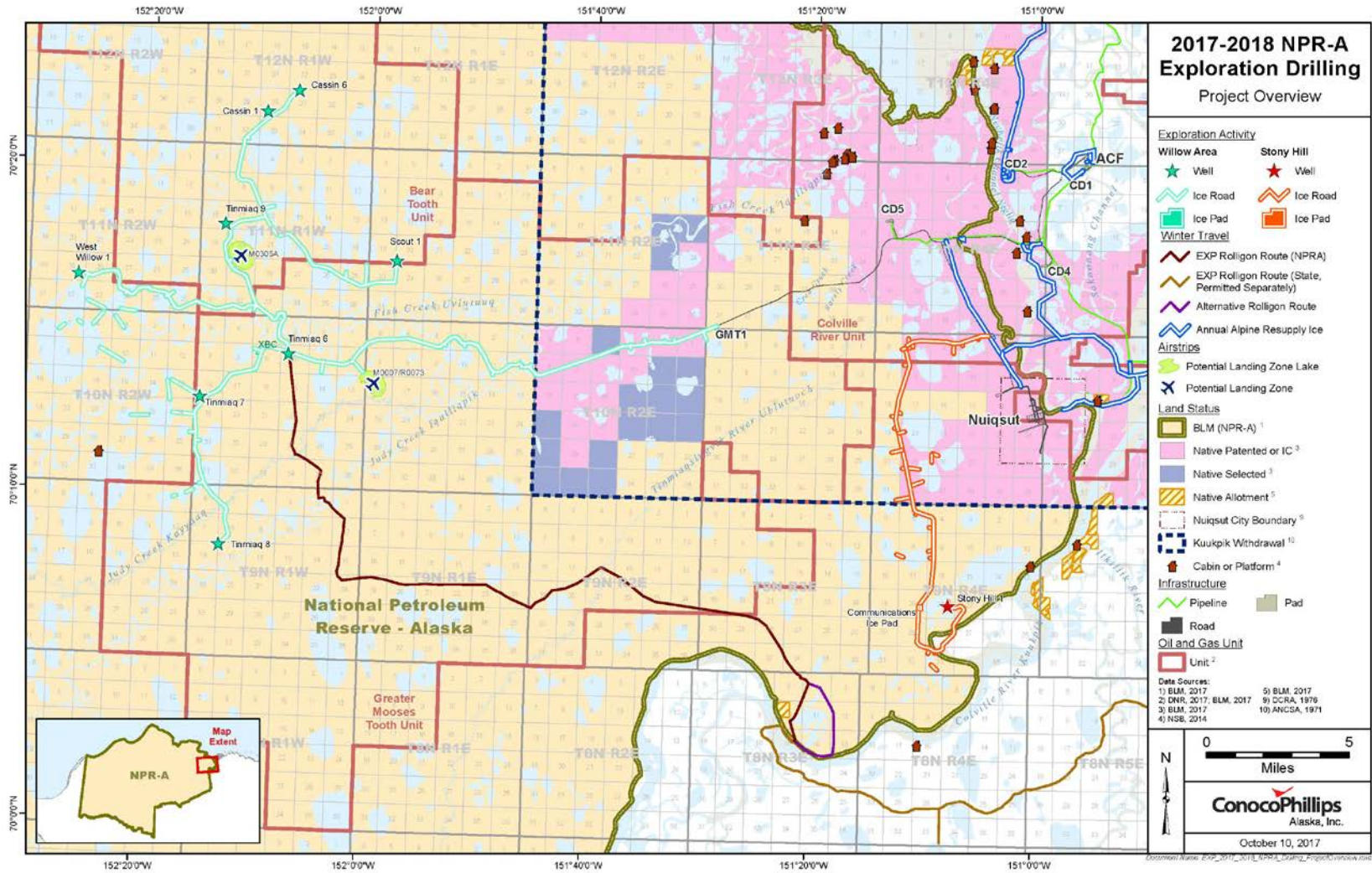


Figure 1 Applicant Submitted Map of Project Area

1.2 Purpose of the Proposed Action

The purpose for action is for BLM to provide access to and use of public lands within the NPR-A in a manner that protects the natural resources of public lands and prevents unnecessary or undue degradation. The objective of the proposed action is to allow the applicant to conduct the requested activity. The applicant's purpose of the proposed project is to determine whether lease holdings contain economically recoverable oil and gas in a one-year exploration drilling and well testing program and the P&A of up to three wells.

The proposed project is composed of several elements and is designed to meet the applicant's needs and objectives, including:

- Access to drilling locations and water supply lakes in a way that allows for maximum operations during the winter season in a cost-effective manner, while minimizing environmental impact.
- Drilling up to five exploratory wells to acquire sufficient subsurface information to satisfy the applicant's economic and exploration performance criteria.
- Testing of an exploratory well to obtain further data on the well.
- P&A activities at up to three wells in the area to maximize resources.
- Compliance with all related requirements of the NPR-A leases, Record of Decisions (RODs), and all associated laws, regulations, permits, and approvals.

Alternatives to the proposed project are evaluated on the basis of their effectiveness in meeting these objectives.

1.3 Related Statutes, Regulations, Policies, and Programs

The 2012 Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) was completed to fulfill the BLM's responsibility to manage lands in the NPR-A under the authority of the: Naval Petroleum Reserves Production Act, as amended (NPRPA), Federal Land Policy and Management Act of 1976 (FLPMA), National Environmental Policy Act, and the Alaska National Interest Lands Conservation Act (ANILCA). In 2014 BLM completed the Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan (SEIS/ASDP) for the Proposed Greater Mooses Tooth One Development Project and completed the Record of Decision in 2015. Findings in the IAP/EIS, SEIS/ASDP and decisions reflected in the 2013 and 2015 RODs were based upon an open and collaborative public process, as well as experience with multiple exploration programs completed in the NPR-A.

1.3.1 Federal Laws and Regulations

The proposed action must comply with numerous Federal laws and Executive Orders (EO) that apply to activities on public lands – including those listed above. Key Federal and State controls associated with the proposed action were described in the 2012 IAP/EIS. The proposed action is consistent with the 2001 National Energy Policy and the Energy Policy Act of 2005.

The proposed action is in conformance with the NPR-A IAP/EIS (2012), NPRPA, FLPMA, ANILCA, Endangered Species Act (ESA), Marine Mammal Protection Act, Sustainable Fisheries Act, EO 11988, and EO 11990.

Mitigation measures called Best Management Practices (BMP) were developed through the BLM planning process/NEPA process for the NPR-A 2012 IAP/EIS and are found in [Appendix C](#) of the 2013 ROD. A company proposing to conduct activity within the NPR-A must meet the objectives of these requirements. CPAI has requested a deviation from three of the requirements. Information on the requests are found in Chapter 2 Section [2.12.1](#), [2.1.3.1](#) and [2.1.6.1](#).

1.3.2 Required Permits, Licenses, Authorizations, and Approvals

A number of Federal, State, and local permits and approvals must be obtained before the applicant can access a drill site and commence drilling. Primary regulatory authorization requirements for the proposed project are listed in [Table 1.1](#).

Table 1.1 Permits and Authorizations

Federal Authorities	Authorizations and Approvals
Bureau of Land Management (BLM).	Application Permit to Drill. Right-of-Way. Threatened and Endangered Species Determination. Essential Fish Habitat Assessment. Subsistence Plan. ANILCA 810 Evaluation and Findings. Archaeological and Cultural Resources Clearance. Waste Management Plan. Orientation Program. Weed Management Plan.
Environmental Protection Agency	Spill Prevention Control and Countermeasure Plan.
U.S. Fish and Wildlife Service.	Letter of Authorizations for the Incidental and the Intentional Take of Polar Bears. Concurrence on BLM Threatened and Endangered Species Determination.
State Authorities	Authorizations and Approvals
Alaska Department of Environmental Conservation	Air Quality Minor General Permit 1. Certificate of Financial Responsibility. Oil Discharge Prevention and Contingency Plan. Temporary Storage of Drilling Waste.
Alaska Department of Fish and Game	Fish Habitat Permits.
Alaska Department of Natural Resources	Temporary Water Use Authorizations.
Alaska Oil and Gas Conservation Commission	Permit To Drill.
Local Government Authorities	Authorization and Approvals
North Slope Borough	Administrative Approval. Development Permit. Inupiat History, Language, and Culture. (IHLC) Clearance.

Additionally, several existing permits apply to the proposed CPAI project ([Table 1.2](#)). These permits were applied for and received in conjunction with past projects in the same general area as the current proposed project.

1.3.3 Related Environmental Analyses

The Council of Environmental Quality (CEQ) Regulation 40 Code of Federal Regulation (CFR) 1502.20 encourages agencies to “tier off their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review.” The analysis for this EA is tiered off the National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement (USDOI BLM 2012) and ROD (USDOI BLM 2013), and the 2014 Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth One Development Project (USDOI BLM 2014) and ROD (USDOI BLM 2015) which are incorporated in their entirety by reference in accordance with CEQ Regulation 40 CFR 1502.21.

1.4 Decision to be Made

The EA assists the BLM in project planning by evaluating the potential significance of environmental impacts. As defined by the CEQ, the significance of a federal action is determined by the context of the action in relation to the overall project setting, as well as the intensity of direct, indirect, and cumulative effects resulting from the project. If the BLM determines that the preferred alternative would not result in significant impacts beyond those already addressed in the USDOI BLM 2012 and ROD, the BLM would prepare a Finding of No New Significant Impact and Decision Record approving the selected alternative. If the project is found to result in significant impacts, an Environmental Impact Statement would be prepared.

The decision-maker, BLM Authorized Officer, will take into account technical, economic, environmental, and social issues ([Table 1.3](#)) and the purpose and need of the proposed project. This EA will be based on findings, management controls and protective measures of the NPR-A ROD (USDOI BLM 2013) as well as other laws and regulations. The scope of this EA includes analysis which enables BLM to select among alternatives that meet the purpose and need, and are within the BLM’s jurisdiction [40 CFR 1506.1(a) (2)].

Table 1.2 Existing Permits and Regulatory Approvals

Approval Type	Permit Number	Expiration Date
Air Quality Minor General Permit (Doyon Arctic Fox Rig)	AQ1015MG151	5/15/2018
Air Quality Minor General Permit (Doyon 141 Rig)	AQ1015MG150	5/15/2018
Fish Habitat Permit	FH13-III-0315	06/1/2018
Fish Habitat Permit	FH12-III-0263	06/1/2018
Fish Habitat Permit	FH12-III-0264	06/1/2018
Fish Habitat Permit	FH12-III-0321 #1	05/1/2022
Fish Habitat Permit	FH13-III-0325	06/1/2018
Fish Habitat Permit	FH17-III-0162	06/1/2023
Fish Habitat Permit	FH17-III-0159	06/1/2023
Fish Habitat Permit	FH17-III-0160	06/1/2023
Fish Habitat Permit	FH17-III-0161	06/1/2023
Fish Habitat Permit	FH17-III-0166	06/1/2023
Fish Habitat Permit	FH17-III-0163	06/1/2023
Fish Habitat Permit	FH17-III-0164	06/1/2023
Fish Habitat Permit	FH13-III-0359	06/1/2018
Fish Habitat Permit	FH12-III-0262	06/1/2018
Fish Habitat Permit	FH15-III-0251	12/31/2020
Fish Habitat Permit	FH12-III-0267	06/1/2018
Fish Habitat Permit	FH12-III-0278	06/1/2018
Fish Habitat Permit	FH12-III-0260	06/1/2018
Fish Habitat Permit	FH12-III-0276	06/1/2018
Fish Habitat Permit	FH12-III-0266	06/1/2018
Land Use	LAS 23007	01/06/2020
Land Use	LAS 25360	01/06/2020
Temporary Water Use Permit	TWUA A2012-173	12/20/2017
Temporary Water Use Permit	TWUA A2012-175	12/9/2017
Temporary Water Use Permit	TWUA A2012-174	12/20/2017
Temporary Water Use Permit	TWUA A2012-53	12/17/2017
Temporary Water Use Permit	TWUA A2010-118	12/2/2017
Temporary Water Use Permit	TWUA A2013-163	12/6/2018
Temporary Water Use Permit	TWUA A2013-164	01/25/2020
Temporary Water Use Permit	TWUA A2013-162	12/3/2018
Temporary Water Use Permit	TWUA A2015-134	1/19/2021
Temporary Water Use Permit	TWUA A2012-177	12/19/2017
Temporary Water Use Permit	TWUA A2012-176	12/10/2017

1.5 Scoping and Issues

Public notification of the Environmental Analysis was announced on October 11, 2017 in the NEPA Register on file at the Arctic District Office Environmental Assessment web site. The

proposed action was also made available to the public. BLM received one comment letter with several comments from The Wilderness Society, Alaska Wilderness League, Center for Biological Diversity, Conservation Lands Foundation, Earthjustice, Sierra Club and the Northern Alaska Environmental Center. The comments and BLMs response to the comments may be found in [Appendix E](#).

Community meetings were held in Nuiqsut, Anaktuvk Pass, Utqiagvik, and Atkasuk. Community members had concerns in regard to caribou, the amount of activity near Nuiqsut, timeline of activity, length of ice road, and employment opportunities.

Development of the 2012 IAP/EIS involved extensive input from other Federal agencies, the State, the NSB, thousands of individuals, and many institutions. A summary listing of related issues considered by Arctic Field Office Staff is provided in [Table 1.3](#).

Table 1.3 Issues Considered in Evaluating Impacts

Issue Considered	Determination	Basis of Determination (See Note 1)¹
ACEC's	Not Present	
Air Quality	Minimal Impact	Protection provided by: ADEC air permit and BMP A-9
Cultural and Paleontological Resources	Not Present	Archaeological survey completed; no identified cultural or paleontological resources in the project area. Cultural resources expected to remain unaffected based on location; no impacts to paleontological resources expected, based on identified locations and <i>de minimus</i> surface disturbance. Protection provided by BMP C-2, E-13, and I-1.
Environmental Justice	Potentially Affected	Any adverse impacts to subsistence and sociocultural systems present environmental justice issues because they disproportionately affect a minority population. Impacts to subsistence uses from this project in and of itself are expected to be moderate and short term (reduced access and reduced availability of resources). Cumulative effects to subsistence and sociocultural systems have been previously analyzed, no new significance impacts are anticipated. Protection provided by NPR-A BMPs A-1 – A-7, A-9, B-1, B-2, F-1, H-1, H-3, and I-1. EO 12897 [See Subsistence]
Fish	Potentially Affected	The potential for affecting fish or fish habitat is increased with the deviations permitted for BMPs A-5 and B-2 - requirements in Additional Mitigation and Monitoring (section 4.4) will assist in evaluating those possible effects. Protections from other potential impacts provided by BMPs A-3, A-4, A-5, A6, B-1, B-2, C-2, C-3, C-4, and Lease Stipulation D-1; additional permit stipulations required by this EA (Section 4.4); and ADF&G Fish Habitat Permits. EFH assessment finding is not likely to adversely affect.
Floodplains/Wetlands and Riparian Zones	Minimal Impact	Protection provided by BMPs A-2, A-4, A-5, C-2, C-3, C-4, Lease Stipulation D-1 And EO 11988 and EO 11990.

Issue Considered	Determination	Basis of Determination (See Note 1) ¹
Invasive, Non-native species	Minimal Impact to Not Present	BMP M-2 (ROD for NPRA IAP/EIS 2013) would greatly reduce the probability that invasive plants become an issue. See Section 2.1.9.6 for the Weed Control Plan.
Native American Religious Concerns	Not Present	There are no known Native American Religious concerns in the area of the proposed action.
Recreation	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1 - A-5, A-8, A-12, B-1, B-2, C-1 - C-4, E-9, F-1, H-3, I-1, M-1, M-2 and lease stipulations D-01, D-2, G-1.
Sociocultural Systems	Potentially Affected	Sociocultural issues likely to result from the proposed activity include stress over the pace of exploration, tensions and conflict related to the permitting process and lack of capacity to respond at levels desired, distrust of agencies and industry, lack of local control over the activity, and cultural (and subsistence) concerns associated with the westward extent/location of the action in the Fish Creek area. The direct and indirect impacts of this project are expected to be minimally impacted. Cumulative effects to subsistence have been previously analyzed, no new significance impacts are anticipated. Protections provided by NPR-A BMPs A-1 – A-7, A-9,A-12, B-1, B-2, F-1, H-1, H-3, and I-1.
Subsistence	Potentially Affected	Large game (subsistence resources) could be deflected from areas of exploration activity. The activity occurs over a large area, all within Nuiqsut’s subsistence use area. Hunters may avoid the area and may have to travel further and longer to harvest. Impacts to subsistence use from this project in and of itself are expected to be moderate and short term (reduced access and reduced availability of resources). Cumulative effects to subsistence have been previously analyzed, no new significance impacts are anticipated. ANILCA 810 Evaluation and Findings by BLM required. Additional protection provided by: NPR-A BMPs A-1 – A-7, A-9,A-12, B-1, B-2, C-4, F-1, H-1, H-3, and I-1.
Threatened & Endangered Species Steller’s eider	Minimally Impacted	Steller’s eiders are listed as Threatened under the Endangered Species Act. No impacts expected other than those already covered in 2012 NPRA Final IAP/EIS. The Steller’s eider is very unlikely to be found in the project area during the summer months. The proposed action would not alter the distribution, migration or location of fisheries resources that would impact Steller’s eiders feeding from lakes or rivers in the project area. USFWS concurred with the BLM ESA finding of not likely to adversely affect. Protections are provided by Section 7 of the Endangered Species Act, and BMP’s A-2 thru A-7, E-9, E-18, and I-1 from the 2013 ROD
Threatened & Endangered Species Spectacled eider	Minimally Impacted	Spectacled eiders are listed as Threatened under the Endangered Species Act. No impacts expected other than those already covered in 2012 NPRA Final IAP/EIS. The proposed action would not alter the distribution, migration or location of fisheries resources that would impact spectacled eiders feeding from lakes or rivers in the project area. USFWS concurred with the BLM ESA finding of not likely to adversely affect. Protections are provided by Section 7 of the Endangered Species Act, and BMP’s A-2 thru A-7, E-9, E-18, and I-1 from the 2013 ROD .

Issue Considered	Determination	Basis of Determination (See Note 1)¹
Threatened & Endangered Species Polar Bear	Minimally Impacted	Letter of Authorization for the Incidental Take of polar bears issued under sections 101 (a) (4) (A) (c), 109(h) and 112(c) of the Marine Mammal Protection Act. In accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA), issuance of these LOAs also fulfills the requirements for Tier 2 Consultation of the Programmatic Biological Opinion. Protection provided by Section 7 of the Endangered Species Act and BMPs A-4 - A-8, C-1, F-1, I-1, and M-1 from the 2013 ROD. USFWS concurred with the BLM ESA finding of not likely to adversely affect.
Non threatened and endangered birds	Minimally Impacted	Snowy owls, gyrfalcons, raven and ptarmigan may inhabit the area during the operations period. No impacts expected other than those already covered in 2012 NPRA Final IAP/EIS. The proposed action would not alter the distribution, migration or location of fisheries resources that would impact birds feeding from lakes or rivers in the project area. Protections are provided in the 2013 ROD by BMPs A-2 – A-7, E-9, E-15, and I-1.
Non threatened and endangered mammals	Minimally Impacted	Caribou, grizzly bear, polar bear, wolf, wolverine and small mammals (weasel, rodents, and shrews) may inhabit the area. No impacts expected other than those already covered in 2012NPRA Final IAP/EIS. The proposed action may disturb wildlife from the immediate area of traffic but would not significantly reduce population levels or distribution during the winter season. Protection provided in the ROD for that document BMPs A-4 – A-8, C-1, F-1b, I-1, and M-1.
Vegetation	Minimally Impacted	Protection provided by BMP's C-2 and M-2 and Lease Stipulation D-2 (NPRA Final IAP/EIS).
Visual Resource Management	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1-A-5, A-8, C-1-C-3, E-9, F-1, I-1, M-1, M-2 and lease stipulations D-1, D-2 G-1.
Water Resources	Potentially Affected	The potential for affecting water resources is increased with the deviations permitted for BMPs A-5 and B-2 - requirements in Additional Mitigation and Monitoring (section 4.4) will assist in evaluating those possible effects. Protections from other potential impacts provided by BMPs A-2 – A-7, B-1, B-2, C2 – C-4; additional permit stipulations required by this EA (Section 4.4); and required permits issued by USCOE, EPA, ADEC, ADFG and ADNR required permits.
Waste (Hazardous/Solid)	Minimally Impacted	Protection provided by ADEC waste storage permit, the Conoco Waste Management Plan, required C-Plans and SPCC Plans, and BLM-required Orientation and Subsistence Protection Plans. Other protections provided by BMPs A-1 – A-7.
Wild & Scenic Rivers	Not Present	
Wilderness Characteristics	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1- A-5, A-8, A-9, A-12, B-1, B-2, C-1-C-3, E-9, F-1, I-1, M-1,M-2 and lease stipulations D-01, D-2, G-1

Key to Table 1.3:

ACEC- Area of Critical Environmental Concern
ADEC – Alaska Department of Environmental Conservation
ADFG- Alaska Department of Fish and Game
ADNR-Alaska Department of Natural Resources
ANILCA- Alaska National Interest Lands Conservation Act
BMP- Best Management Practice
C-Plan- Oil Spill Discharge and Contingency Plan
EFH – Essential Fish Habitat
EO- Executive Order

EPA- Environmental Protection Agency
ESA- Endangered Species Act
IAP/EIS- Integrated Activity Plan/Environmental Impact Statement
LOA – Letter of Authorization
NPPRA-National Petroleum Reserve in Alaska
ROD – Record of Decision
SPCC-Spill Prevention, Control, and Countermeasures
USCOE- United States Corp of Engineers
USFWS-United States Fish & Wildlife Service

Potentially Affected: The proposed action or alternative could result in potential impacts to resource or issues to the level that additional mitigation may be required, or there is a need to evaluate potentially significant issues.

Minimally Impacted: Resources or issues would not be affected to a degree requiring further analysis because either the expected impacts from the proposed action and alternative would be minimal, or standard protections (e.g.,BMPs and Stipulations from overriding BLM plans or other legal protections) would reduce impacts. Minimally impacted resources or issues will not be analyzed further in this EA.

Not Present: Resources or issues are not expected to be affected by the proposed action or alternatives because activities would occur at a different time or place. Resource or issues not present will not be analyzed further in the EA.

Notes, Table 1.3:

1 Determination tiered from: 2012 IAP/EIS Vo1. 2, Chapter 4; 2013 ROD; and laws and regulations as noted.

In summary, BLM resource specialists have identified the following issue for further evaluation in this EA: Fish and Water Resources, Subsistence, Sociocultural Systems, and Environmental Justice.

1.6 Public Involvement

Development of the NPR-A IAP/EIS (USDOI BLM 2012) and SEIS/ASDP involved extensive input from Federal agencies, the State, the NSB, thousands of individuals, and many institutions. Project-specific permit applications ([see Table 1.1](#)) are available for public review prior to agency decision making.

A number of meetings and consultations have been held in Anaktuvuk Pass, Pt. Lay, Atqasuk, Nuiqsut, and Utqiagvik by the applicant to discuss the current proposed activity by CPAI ([Table 1.4](#)). The applicant has also submitted a Subsistence Plan to the BLM that details the strategy to be employed by CPAI in order to ensure ongoing opportunities for local public involvement as the project proceeds.

Table 1.4 Community Meetings Held in Relation to the Proposed Project Area.

Meeting Date	Location	Event
August 31, 2017	Utqiagvik, Alaska	NSB Planning Commission Meeting
October 10, 2017	Anaktuvuk Pass, Alaska	Tri-lateral and Community Meeting
October 17, 2017	Utqiagvik, Alaska	City of Utqiagvik (Mayor)
October 18, 2017	Anchorage, Alaska	Kuukpik Native Corporation Board
November 2, 2017	Utqiagvik, Alaska	Native Village of Utqiagvik, ICAS and Utqiagvik Community Meeting
November 3, 2017	Atqasuk, Alaska	Atqasuk Native Corporation, City Mayor, and Community Meeting
November 14, 2017	Nuiqsut, Alaska	Community Meeting & Open House
November 28, 2017	Wainwright, Alaska	Community Meeting
November 29, 2017	Pt. Lay, Alaska	Community Meeting
November/December 2017	Atqasuk, Alaska	Community Meeting

Chapter 2

2 Proposed Action and Alternatives

The proposed project includes exploration drilling at five potential sites, testing at a currently existing but suspended well, and the possible P&A activities at three locations during a one year

winter program in the northeast NPR-A ([Table 2.1](#)). The leases for the project are co-owned by CPAI and Anadarko E&P Onshore LLC. CPAI would be the operator of the proposed activity. Recent photographs of the nine possible work locations may be found in [Appendix A](#). The five potential sites for exploratory drilling are Stony Hill 1 ([Photograph 2](#)), Tinmiaq 7 ([Photograph 3](#)), Tinmiaq 8 ([Photograph 4](#)), Tinmiaq 9 ([Photograph 5](#)), and West Willow 1 ([Photograph 6](#)). Of these five wells only the Stony Hill 1 site is planned for P&A activities this season if initial exploratory drilling is not successful. The potential well testing site, Tinmiaq 6 ([Photograph 1](#)) was drilled in 2016, has an existing well head and is in a suspended state. If timing allows, CPAI may conduct P&A activities at additional previously suspended wells this season to take advantage of the ice road associated with the exploration program. The three currently suspended well sites that are potential sites for P&A activities for this season are Cassin 1 ([Photograph 7](#)), Cassin 6 ([Photograph 8](#)), and Scout 1 ([Photograph 9](#)). The Stony Hill 1 well would be drilled using the Doyon Arctic Fox Rig. Well evaluation through hydro-fracture stimulation and testing may be performed at any of the locations after completion of well drilling operations. All the other wells drilled this season would be drilled using the Doyon 141 drill rig. The Tinmiaq 6 Well would be used for testing only and no rig would be used at the site.

The proposed exploration program would take place in winter 2017-2018, with the drilling schedule contingent upon permitting, weather, ongoing data analysis, and funding. [Table 2.2](#) documents the Notices of Staking dates and field inspections, as required by BLM regulations. Access routes have been identified and field examined. Locations of the drill sites and local access routes are depicted on [Figure 1](#). The proposed schedule is shown in [Table 2.3](#).

Table 2.1 Well Locations

Site Name	Activity	Township	Range	Section	Latitude	Longitude
Cassin 1	P&A	12 North	1 West	28	70.360723 N	152.163779 W.
Cassin 6	P&A	12 North	1 West	27	70.371611 N	152.116945 W
Scout 1	P&A	11 North	1 East	20	70.286865 N	151.962556 W
Stony Hill 1	Exploration Well	11 North	2 West	29 NESE	70.119 N	151.127 W
Tinmiaq 6	Exploration Well	10 North	2 West	10	70.238145 N	152.12104 W
Tinmiaq 7	Exploration Well	10 North	1 West	18	70.214904 N	152.251133 W
Tinmiaq 8	Exploration Well	9 North	1 West	17	70.140623 N	152.215842 W
Tinmiaq 9	Exploration Well	11 North	1 West	18	70.303029 N	152.221433 W
West Willow 1	Exploration Well	11 North	2 West	29	70.275147 N	152.438952 W

Table 2.2 Staking and Field Inspection

Drill Site Name	BLM Lease Case File Number	Notice of Staking (NOS) date	Field Staked	Field Inspection Date
Stony Hill 1	AA093131	September 8, 2017	August 2017	August 11, 2017
Tinmiaq 6	AA081746	2015	2015	August 10, 2017
Tinmiaq 7	AA081810	September 21, 2017	August 2017	August 10, 2017
Tinmiaq 8	AA092673	September 21, 2017	August 2017	August 10, 2017
Tinmiaq 9	AA087891	September 21, 2017	August 2017	August 10, 2017
West Willow 1	AA094422	August 31, 2017	August 2017	August 10, 2017

Table 2.3 Estimated Schedule

Activity	Proposed Start Date	Proposed End Date
Pre-Packing of Ice Roads and Pads	November 1, 2017*	December 15, 2017
Ice Road and Pad Construction	December 15, 2017	January 10, 2018
Drilling Rig Mobilization	January 10, 2018	January 15, 2018
Drilling, Completion and Testing, P&A (various wells)	January 15, 2018	April 15, 2018
Drill Rig Demobilization	April 15, 2018	May 1, 2018

*Upon Obtaining Authorization

2.1 Alternative A - Description of the Proposed Action

The proposed project is described below, with main project components summarized in [Table 2.4](#). The proposed project is similar to exploration and P&A programs completed in the NPR-A in previous winter seasons. Details are provided in the Applicant's Plan of Operations, submitted to multiple agencies including the BLM, Alaska Department of Natural Resources (ADNR), and the NSB.

Table 2.4 Summary of Proposed Project

Project Component	Program Total
Ice Pads	Up to nine pads approximately 800 feet × 800 feet, XBC pad 500 feet x 500 feet and one pad 200 feet x 200 feet
Drilling Locations	Up to 5 Locations
Testing Locations	One Location
P&A Locations	Up to 3 Locations
Construction/ Drilling Support Camps	Maximum Number of People that may be housed in camps is 480 Doyon Rig Camp Maximum 100 people Doyon Rig Camp at Stony Hill Maximum 50 people

Project Component	Program Total
	Stallion Camp Maximum of 60 People (Up to 5 Stallion Camps may be used with a maximum capacity of 300 people) XBC Camp Maximum 30 people.
Access	Approximately 71.2 miles of Ice Access and an additional 20.08 miles of ice access to lakes. Approximately 30 miles of Snow Trail on BLM Managed Land.
Water requirement	Total of 256.42 MG for the entire project.

2.1.1 Access and Construction

The proposed activity would take place from November 2017 through May 2018, with the actual timing dependent upon field conditions including tundra conditions and logistical issues. The proposed schedule calls for ice pad/road construction to begin in December 2017 through January 2018 (Table 2.3). There are two main areas of exploration planned in NPR-A, the Willow Area (to the west of Nuiqsut) and the Stony Hill Area which is south of Nuiqsut near the Colville River.

The Stony Hill 1 and West Willow 1 locations are located in non-unit areas of the NPR-A. The Tinmiaq 6 (existing), Tinmiaq 7, and Tinmiaq 8 locations are located in the GMTU. The Tinmiaq 9 location is within the BTU; the existing Cassin 1, Cassin 6 and Scout 1 wells are also in the BTU.

CPAI anticipates drilling operations to start in January 2018 depending on when the first pad is accessible via the ice road. The current order of work to be conducted are:

- Tinmiaq 6 testing concurrent with Tinmiaq 7 and Stony Hill 1 exploratory well drilling
- Tinmiaq 8 exploratory well drilling
- West Willow 1 exploratory well drilling
- Tinmiaq 9 exploratory well drilling
- P&A activities at existing suspended wells (Cassin 1, Cassin 6 and Scout)

Primary access would be by winter snow trail and ice roads. The rolligon route would provide initial access into the NPR-A then drilling rig and equipment access to the proposed exploration wells would be by ice roads (Figure 1). A snow trail (Rolligon route) starting from the Kuparuk drill site 2P pad (DS-2P) (Non-BLM Managed land), would cross the Colville River at, or near, Ocean Point to access drill site locations in the NPR-A (approximately 60 miles in length).

Rolligon units and/or other approved tundra vehicles would be used to transport equipment and personnel to begin prepacking the ice road. A list of equipment to be used for surveying, prepacking and mobilization are shown in Table 2.5. There would be three crews working on the construction of ice roads and ice pads. A list of potential equipment that each crew would use is listed in Table 2.6. CPAI has contracted with Nanuq-AFC and Peak Construction to construct the ice roads this year.

Table 2.5 All-Terrain Equipment List for Surveying, Prepacking and NPRA Mobilization

Equipment	Quantity
Rolligons Tractors with Heavy Haul Trailers	15
Snowmachines	6
Haaglund	2
Tuckers for surveying	2
Terra Gators	3
Bed Truck	1
80 Ton (or Less) Crane	1
30 Man Remote Camp (Canning Camp)	1

Pre-packing of ice roads and ice pads may be required and would be conducted by compressing existing snow with snow machines, Rolligons, or Smooth Tracked Tuckers. Side-casting of water on the route may also be conducted; water for side casting would be obtained from permitted sources. Some minor re-routes may be required depending on site specific conditions at the time of construction.

Ice roads would be built using a combination of existing snow, water, and ice chips from approved water sources along the route. Ice roads would generally be 25-35 feet wide and 6-inches thick, depending on drilling rig and vehicle requirements. Rig mats or other similar items may be used on or in the construction of ice roads at selected locations as necessitated by field conditions encountered during ice road construction or during equipment movement. Such devices would be removed prior to the end of the operating season.

Table 2.6 Ice Road and Pad Construction Potential Equipment List

Equipment & Quantity	Equipment & Quantity	Equipment & Quantity
Rolligons (3)	Conventional Water Pump (2)	Snowblower (1)
Envirovac (1)	Terra Gator (3)	300 bbl Water Tankers with Tractor
Fuel Truck (1)	150 bbl. Water Truck (6)	140 bbl. Volvo Water Wagon (Buffalo) (2)
16G Motor Grader (2)	Mechanics Truck (1)	Volvo A35 Rock Truck (25 cy) (2)
966 Loader (4)	Overhead Pump (2)	Maxi Hauls (30 cy) w/Tractor (4)
Trimmer (1)	Light Plant (6)	Ice Road Van/Parts Connex (1)
Pickup (5)	Heater (5)	15 passenger Van/Bus (2)
Tucker (2)	N/A	N/A

CPAI would construct an access ice road to the Stony Hill area from the Alpine Resupply Ice Road that extends south to the Stony Hill 1 exploration drilling location. The Stony Hill ice road would have a total of approximately 6.17 miles of ice road built to access water sources at 28 lakes along the road. Minor variations in ice road routing may occur due to field conditions; however, CPAI would remain within areas that have attained cultural clearance.

CPAI would construct a 16.7-mile main access ice road between Greater Mooses Tooth 1 (GMT1) gravel pad and Willow area (Tinmiaq 6). From there, ice roads totaling 36.8 miles would branch off to the various exploration locations. The Willow area access ice road network would also have a total of approximately 13.91 miles of ice road built to access water sources at 50 lakes along the road.

Construction of the ice pads would begin as soon as the proposed location can be accessed. Road and pad construction would likely be concurrent. [Figure 2](#) depicts CPAI's typical ice pad layout. The ice pad thickness for the exploration drill sites would be approximately 0.5 to 2 feet, possibly more depending on the topography. Each drill pad would require about 5-10 days to construct.

The drill pads would be constructed of ice with no cut and fill (i.e., no physical change to the surface topography). Construction of the pad would begin as soon as the proposed location can be assessed.

A cultural resources study for site clearance was conducted in August of 2017 by Reanier & Associates, Inc. to assess any known sites, and to locate currently unknown sites. The results of the study were detailed in letter format to the BLM and include background information on the history of the landscape and human use of the study area since the last ice age, descriptions of the NPR-A exploration area, the results of the reconnaissance survey, and conclusions and recommendations for cultural resource clearances. The records review includes the Alaska Heritage Resources Survey (AHRIS) database, maintained by the Office of History and Archaeology within the ADNR; and the Traditional Land Use Inventory (TLUI) database, maintained by the NSB. Sites that exist within the exploration boundary would be protected with a 500-foot radius buffer to ensure no inadvertent damage would occur during exploration operations. No known cultural resources would be affected by the proposed exploration activities.

The proposed winter routes (ice road/snow trail) to the exploration well sites are shown on [Figure 1](#); the routing is approximate. Stream crossings for the Rolligon Route are shown in [Table 2.7](#) and [Figure 3](#); stream crossings for Willow Area are shown in [Table 2.8](#) and [Figure 4](#); stream crossings for the Stony Hill area are shown in [Table 2.9](#) and [Figure 5](#). Upon completion of use, ice road stream crossings would be slotted, breached, or weakened to facilitate breakup and minimize potential impacts to stream banks. Any snow or ice used as fill for ramps would be removed from banks in a manner that does not disturb the natural stream bank.

The exact route would be within a mile of the proposed routes. This flexibility would allow for potential minor rerouting due to field conditions, animal dens, changes in creek crossing characteristics, or other field conditions. Regulatory agencies would be contacted for approval if final routes are greater than a mile away from those shown in [Figure 1](#). As-built maps of the final routes would be prepared following construction and submitted to BLM.

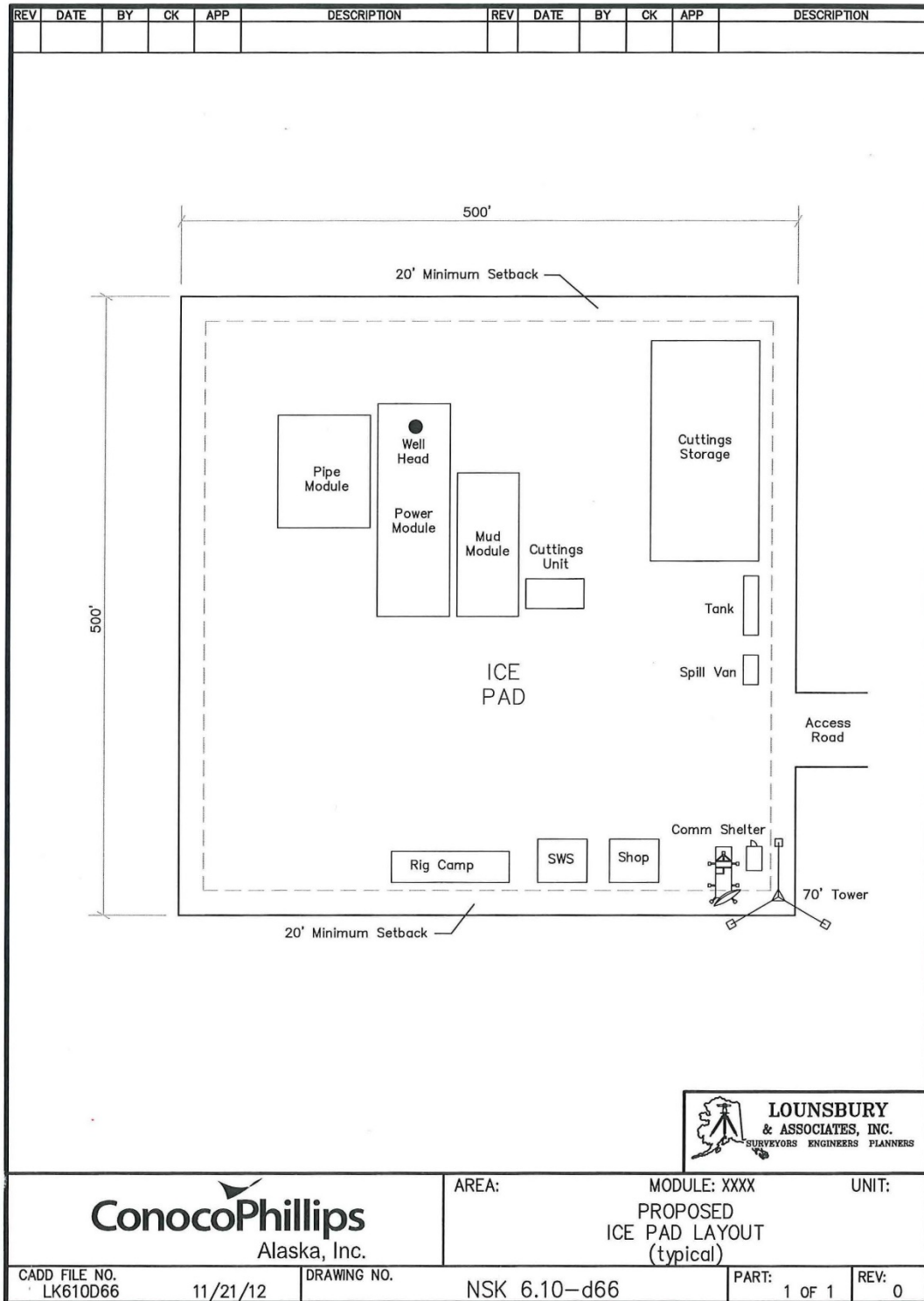


Figure 2: CPAI Typical Ice Pad Layout

Table 2.7 Rolligon Route Stream and River Crossings

Index	Description	River/ Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
84	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 8N, R3E , 10	-151.357312	70.05915889
85	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R3E, 34	-151.34947	70.08332608
86	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R3E, 28	-151.385163	70.10139073
87	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R3E, 28	-151.394377	70.10617005
88	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N, R3E, 20	-151.443195	70.11251834
89	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N, R3E, 19	-151.465697	70.11351059
90	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R3E, 19	-151.494872	70.1147971
91	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E , 24	-151.502565	70.11513631
92	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 24	-151.520443	70.11592468
93	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 23	-151.55942	70.11764338
94	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 22	-151.592982	70.12375188
95	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 15	-151.623332	70.13090884
96	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 16	-151.626469	70.13144741
97	NPR-A route to T6 from Ocean Point	Ublutuoch River	NP/NS	N/A	T 9N, R2E, 16	-151.642437	70.13418887
98	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N, R2E , 16	-151.643864	70.13439819
99	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R2E, 19	-151.743765	70.11428024
100	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 23	-151.803024	70.1217156
101	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N, R1E, 23	-151.818957	70.12398315
102	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 21	-151.889741	70.12328427
103	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 21	-151.90498	70.12334483
104	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E , 20	-151.936301	70.12281005

Index	Description	River/ Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
105	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 19	-151.962709	70.12468042
106	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 19	-151.96406	70.12479442
107	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1E, 19	-151.97702	70.12557721
108	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1W , 24	-152.018076	70.12453955
109	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N, R1W, 24	-152.034342	70.12539942
110	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1W, 12	-152.030908	70.14625337
111	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1W , 12	-152.030671	70.1470202
112	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T 9N, R1W , 12	-152.029669	70.14945109
113	NPR-A route to T6 from Ocean Point	Judy Creek	Present/ Surveyed	330-00-10840- 2043	T9N, R1W , 2	-152.057634	70.16359355
114	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T9N , R1W, 2	-152.068981	70.16615697
115	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10 N, R1W, 35	-152.068287	70.17980852
116	NPR-A route to T6 from Ocean Point	UNR/S	Present/ Surveyed	330-00-10840- 2043-3204	T10N, R1W, 27	-152.103173	70.18684967
117	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 27	-152.111003	70.19164442
118	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 27	-152.108138	70.19861078
119	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W , 22	-152.105836	70.20404797
120	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W , 22	-152.106324	70.20524555
121	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W , 22	-152.108103	70.20961378
122	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 15	-152.110371	70.21518393
123	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 15	-152.111653	70.21833132
124	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 15	-152.113345	70.22248499
125	NPR-A route to T6 from Ocean Point	UNR/S	NP/NS	N/A	T10N, R1W, 10	-152.116153	70.22938062

Key to Table: TRS = Township, Range, Section UNR/S = Unnamed River/Stream NP/NS = Not Present/Not Surveyed

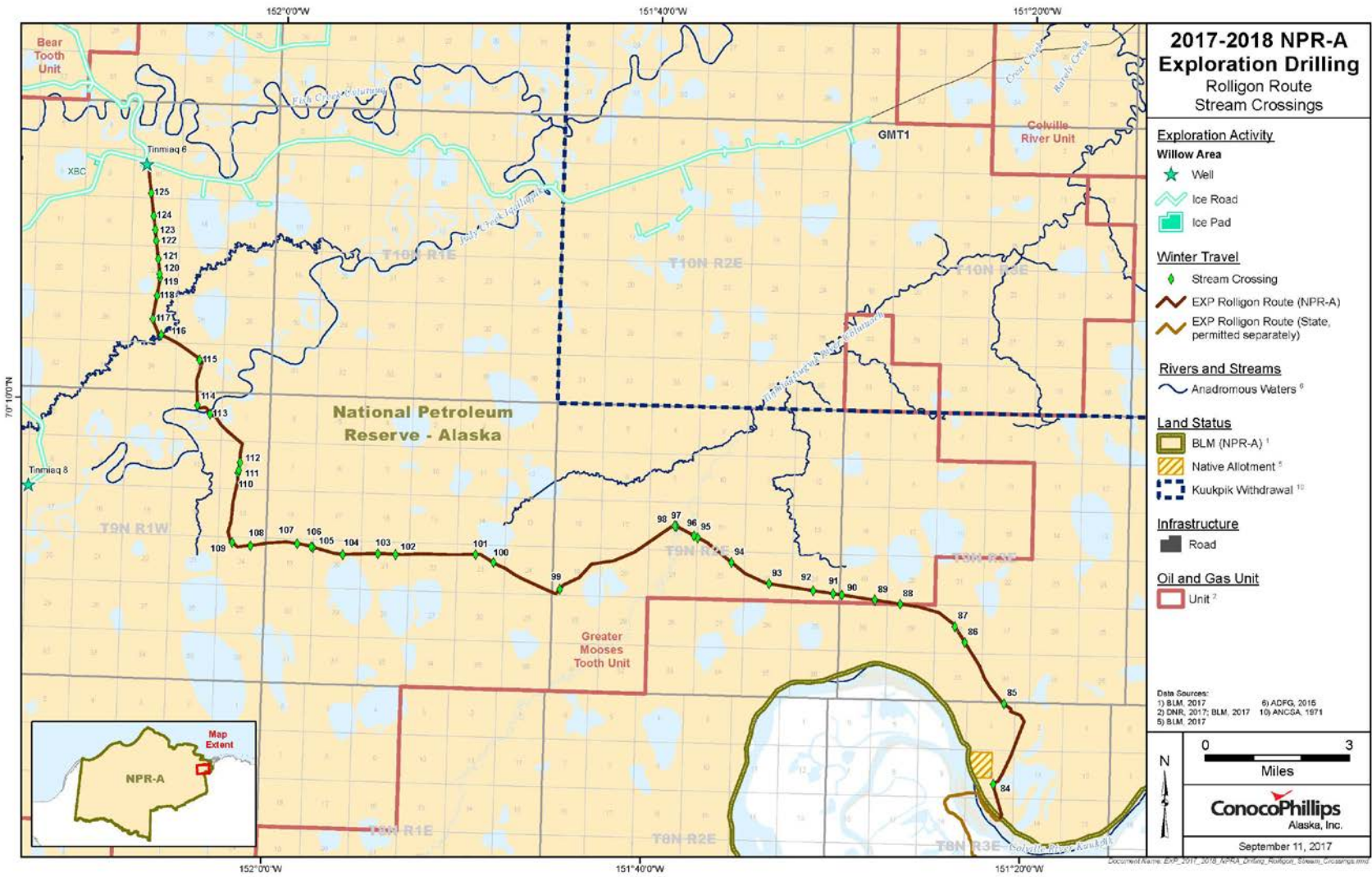


Figure 3: Rolligon Route Stream Crossings Map

Table 2.8 Willow Area Ice Road Stream and River Crossings

Index	Label	Description	River/ Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
1	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R3E, 6	-151.49632	70.25591731
2	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R2E, 1	-151.508556	70.25416707
3	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 0N, R2E , 1	-151 .51994	70.25253757
4	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R2E , 2	-151.56318	70.24921508
5	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 0N, R2E,2	-151.574531	70.24917933
6	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R2E, 3	-151.591438	70.24769562
7	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R2E, 3	-151.604255	70.24730371
8	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R2E, 4	-151.63783	70.24430937
9	LSW7	Lake M9914 Lake Spur Ice Road	UNR/S	NP/NS	N/A	T10 N, R2E, 9	-151.645295	70.24159328
10	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R2E , 9	-151.653243	70.24206116
11	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R2E , 7	-151 .717284	70.23413265
12	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R2E, 7	-151.728415	70.23273072
13	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	Judy Creek - Iqalliqpik	Present/ Surveyed	330-00-10840-2043	T10N, R1E, 12	-151.764618	70.23500457
14	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 0N, R1E, 11	-151.800598	70.23251144
15	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 0N, R1E , 11	-151.823576	70.23755458
16	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E, 11	-151.829999	70.24133846
17	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1E, 2	-151.833285	70.24297405
18	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E, 3	-151.858388	70.24584222
19	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E, 3	-151.865465	70.24763842
20	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1E, 3	-151.867531	70.24844271
21	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1E, 4	-151.914889	70.2451994

Index	Label	Description	River/ Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
22	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E, 5	-151.932587	70.24680384
23	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T 10N, R1E , 5	-151.946908	70.24747265
24	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E , 6	-152.000718	70.24487572
25	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1E,6	-152.00416	70.24392874
26	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N , R1W , 11	-152.057266	70.23390799
27	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W, 11	-152.061271	70.23403447
28	LSW17	Lake M0104 Lake Spur Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W , 11	-152.069598	70.23252792
29	IRW1	GMT1 to Tinmiaq 6 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W, 10	-152.091897	70.23579243
30	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W, 9	-152.149917	70.24100343
31	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W, 9	-152.160139	70.23944542
32	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W , 9	-152.169396	70.22992167
33	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W , 17	-152.192426	70.22758446
34	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W , 17	-152.202845	70.22671494
35	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10N , R1W , 17	-152.20895	70.22517973
36	IRW2	Tinmiaq 7A Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W, 18	-152.225899	70.2177041
37	IRW3	Tinmiaq 8 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W , 19	-152.257655	70.20471996
38	IRW3	Tinmiaq 8 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W, 30	-152.25542	70.19820229
39	IRW3	Tinmiaq 8 Access Ice Road	UNR/S	NP/NS	N/A	T10 N, R1W, 30	-152.254875	70.19514696
40	IRW3	Tinmiaq 8 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W , 31	-152.244734	70.17514306
41	IRW3	Tinmiaq 8 Access Ice Road	Judy Creek - Kayyaaq	Present/Surveyed	330-00-10840-2043-3204	T9N, R1W, 5	-152.207997	70.15977771
42	IRW3	Tinmiaq 8 Access Ice Road	UNR/S	NP/NS	N/A	T 9N, R1W, 8	-152.20631	70.15159144
43	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T10N, R1W , 3	-152.126964	70.24408435
44	IRW4	West Willow 1 Access Ice Road	Fish Creek - Uvlutuug	Present/Surveyed	330-00-10840	T11N, R1W, 33	-152.138495	70.25698226
45	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R2W , 35	-152.303865	70.2651691
46	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R2W , 34	-152.354739	70.26574285

Index	Label	Description	River/ Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
47	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R2W, 34	-152.366878	70.26664874
48	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R2W, 28	-152.390199	70.27676328
49	IRW4	West Willow 1 Access Ice Road	UNR/S	Present/Surveyed	330-00-10850-2210	T11 N, R2W, 28	-152.398825	70.27638309
50	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R2W, 28	-152.418778	70.27408061
51	LSW40	Lake MM1703 Lake Spur Ice Road	UNR/S	Present/Surveyed	330-00-10850-2210	T11N, R2W, 28	-152.426562	70.27371435
52	IRW4	West Willow 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R2W, 29	-152.432179	70.27519495
53	IRW5	Tinmiaq 9 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 33	-152.174426	70.26419309
54	IRW5	Tinmiaq 9 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 29	-152.190741	70.2770301
55	IRW6	Cassin and Scout short Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 17	-152.195857	70.30448701
56	IRW6	Cassin and Scout short Access Ice Road	UNR/S	NP/NS	N/A	T11N, R1W, 17	-152.179638	70.30538339
57	IRW6	Cassin and Scout short Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 16	-152.173439	70.30587084
58	IRWB	Cassin 1 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 16	-152.171582	70.31413812
59	IRWB	Cassin 1 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 8	-152.176521	70.31784564
60	IRWB	Cassin 1 Access Ice Road	UNR/S	NP/NS	N/A	T1 2N, R1W, 28	-152.153717	70.35878217
61	IRW9	Cassin 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 2N, R1W, 28	-152.159363	70.35910161
62	IRW9	Cassin 6 Access Ice Road	UNR/S	NP/NS	N/A	T1 2N, R1W, 28	-152.147944	70.36005957
63	IRW9	Cassin 6 Access Ice Road	UNR/S	NP/NS	N/A	T12N, R1W, 28	-152.137125	70.3635412
64	IRW7	Scout 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R1W, 22	-152.095075	70.28654978
65	IRW7	Scout 1 Access Ice Road	UNR/S	NP/NS	N/A	T11 N, R1W, 26	-152.065763	70.28178376
66	IRW7	Scout 1 Access Ice Road	UNR/S	NP/NS	N/A	T11N, R1W, 25	-152.010819	70.27375083

Key to Table: TRS = Township, Range, Section UNR/S = Unnamed River/Stream NP/NS = Not Present/Not Surveyed

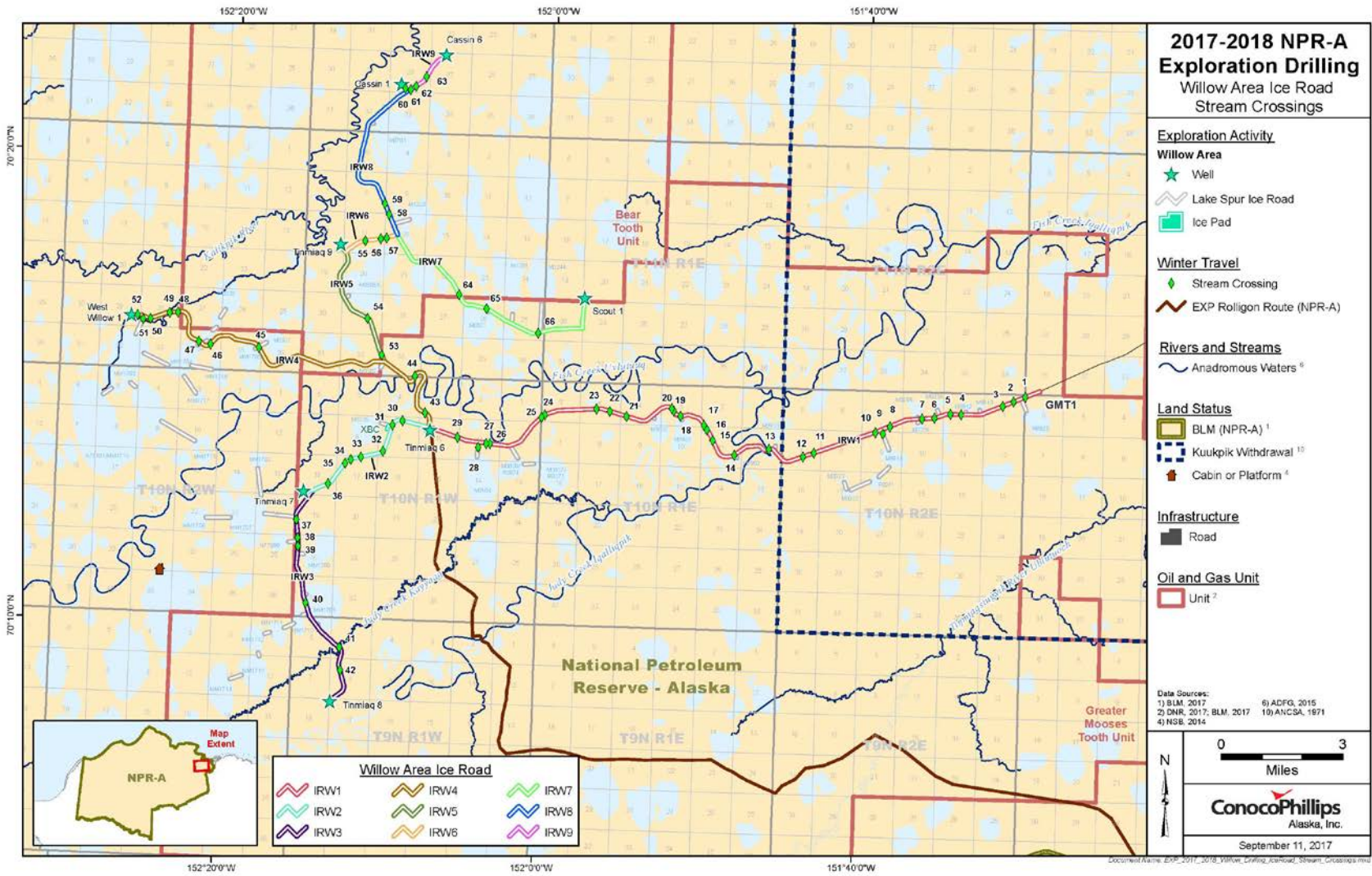


Figure 4: Willow Area Ice Road Stream Crossings

Table 2.9 Stony Hill Area Ice Road Stream and River Crossings

Index	Label	Description	River/Stream	Anadromous Fish	Anadromous Number	TRS	Longitude	Latitude
67	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10 N, R4E, 4	-151.152372	70.25285628
68	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10 N, R4E, 4	-151.157323	70.2529081
69	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10 N, R4E, 5	-151.168743	70.25302708
70	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10 N, R4E, 5	-151.195061	70.25020947
71	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	Present/Surveyed	330-00-10840-2017-3163	T10N, R4E, 19	-151.208034	70.21041004
72	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10N, R4E, 29	-151.195905	70.19397609
73	LSS15	Lake M0703 Lake Spur Ice Road	UNR/S	NP/NS	N/A	T10 N, R4E, 29	-151.194468	70.18831721
74	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T10 N, R4E, 29	-151.191543	70.18744066
75	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T9N, R4E, 16	-151.151449	70.12994202
76	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T 9N, R4E, 29	-151.166248	70.09860157
77	IRS1	Alpine Resupply to Stony Hill Well	UNR/S	NP/NS	N/A	T 9N, R4E, 32	-151.161641	70.09800539
78	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T 9N, R4E, 33	-151.155268	70.09743503
79	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T9N, R4E, 33	-151.143675	70.095719, 1 4
80	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T9N, R4E, 33	-151.136958	70.09622861
81	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T9N, R4E, 28	-151.116451	70.10634507
82	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T 9N, R4E, 22	-151.109302	70.11332437
83	IRS1	Alpine Resupply to Stony Hill Well	Unnamed River/Stream	Not Present/Not Surveyed	N/A	T 9N, R4E, 22	-151.103047	70.11659637

Key to Table: TRS = Township, Range, Section UNR/S = Unnamed River/Stream NP/NS = Not Present/Not Surveyed

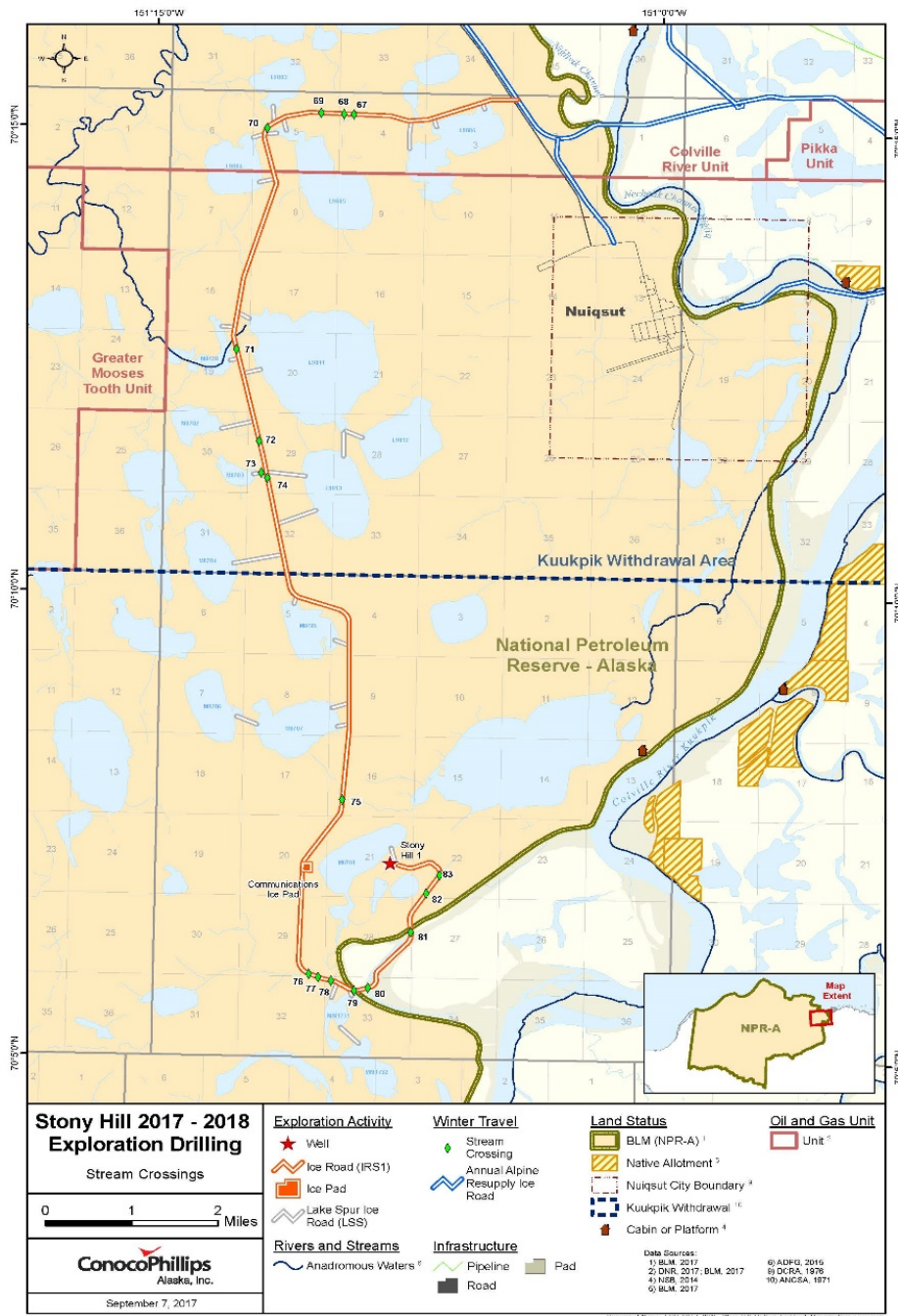


Figure 5: Stony Hill Area Ice Road Stream Crossings

Ice pullout areas along ice roads or widened sections of ice road may be constructed at certain locations depending on field conditions. These wider ice areas are used to protect the tundra during drill rig moves where heavy equipment is required to help pull the rigs up hills, or to temporarily store equipment. Any widened sections of ice road would be documented in the end of season completion reports. All ice road, ice pad, and pullout areas would only be constructed

in areas which have previously been cleared for archaeological/cultural resources, and cleared utilizing the NSB's Traditional Land Use Sites Inventory.

Access to the existing operating field via the Dalton Highway is controlled at security checkpoints. The well sites would be closed to the general public for purposes of safety and confidentiality.

2.1.2 Aircraft

CPAI is proposing to use Lakes M0007 and M0305A as temporary airstrips that would be maintained on non-grounded ice to support their winter operations. A decision would be made in the field as to which of these two lakes to use; they expect to only use one but want to permit both.

They propose to build a 200 feet by 200 feet support ice pad at the selected airstrip location, adjacent to the lake spur road, and at least 100 feet from the edge of the airstrip lake. The pad would be utilized for a support Connex (shelter), a 25-foot communication tower, and generators to power the airstrip lights. The generators cumulative fuel capacity is 300 gallons. There would also be an apron area adjacent to the airstrip on the lake for the plane to turn around and to load passengers. The apron would be constructed similar to the strip (grading existing snow) and no fueling would take place on the apron. Fueling of the aircraft would occur at Alpine or Kuparuk.

The project would utilize CPAI Otter and CASA aircrafts. The airstrip would be prepared by grading the snow on the lake and setting up necessary lights and equipment. The airstrip would be oriented in northeast/southwest direction and would be of sufficient size required for the aircraft. Lake ice thickness would be checked using ground penetrating radar (GPR) and by ice check augering.

Approximately five flights are planned per week during the exploration drilling season. No refueling would take place on the lakes. There would be no night landings or take-offs from the airstrips, unless in an emergency. CPAI is requesting to deviate from BMP B-2g to utilize the fish-bearing lakes M0007 and M0305A for airstrips. CPAI would, however, support the objective of BMP B-2g. The aircraft (Twin Otter DHC-6 and a CASA 212) would land on non-grounded ice. CPAI's policy is to land on non-grounded ice because grounded ice imposes a safety risk for aircraft (buckling, heaving). The aircraft would utilize the airstrip for a short period of time during landings and takeoffs.

2.1.2.1 Deviation to BMP B-2g request

For CPAI's 2017-2018 winter exploration program in the NPR-A, they are requesting a deviation from BMP B-2g which states:

B-2g Best Management Practice

Objective: Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish, invertebrates, and waterfowl.

Requirement/Standard: Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations

on lakes, or areas of grounded ice.

CPAI's justification:

Compacted areas on these lakes would be long and narrow (airstrip shaped), and encompass a small area of the total lake/ice surface. Therefore, the total lake/ice surface area and the depth of these lakes along with very narrow compaction of the snow to create airstrips should not have an adverse effect on the overall hydrologic regime of any given lake and should not impact habitat or populations of fish, invertebrates, or waterfowl. No ice chips or water would be used to construct the airstrips, rather the strip would be graded; compaction would be minimal.

2.1.3 Water Use

The freshwater requirements for constructing the project features (ice road/pads construction, maintenance, drilling operations, and camp use) are approximately 255.67 million gallons (MG) (Table 2.10)¹. The fresh water requirement for ice road construction is approximately 1,000,000 gallons per mile of ice road. Each crew can build approximately 1 mile of road per day. Construction of a typical ice pad requires approximately 2,000,000 gallons of water. Seasonal maintenance of snow/ice roads and pads requires approximately 20% of the initial volume of water required to construct the road or pad. As part of the maintenance process, the road or ice pad may be scarified with equipment and biodegradable traction material such as "nut plug" may be applied sparingly to high foot traffic areas to reduce slickness for safety purposes.

Table 2.10 Water Volumes per NPR-A Location

Construction	Gallons per mile/Pad	Total Gallons
Ice Road (~71 Miles)	1,000,000	71,000,000
One Ice Staging Pad XBC Ice Pad	2,000,000	2,000,000
Six Drilling/Testing Ice Pads	3,000,000	18,000,000
Airstrip Pad	--	750,000
Three P&A Pads	--	6,000,000
Total Construction	--	97,750,000
Operating	Gallons Each	Total Gallons
Road & Pad Maintenance	--	157,500,000
Rig Use Per Well (6)	20,000	120,000
Remote Construction Camp XBC	7,500	1,050,000
Operating Total	--	158,670,000
Total Estimate	--	256,420,000

¹ On November 21 CPAI submitted recalculated numbers estimating that for the road and maintenance they would need 63,000,000 gallons not 157,500,000, reducing the number by 94,500,000 gallons. However BLM completed the analysis using the 157,500,000 figure.

Up to an estimated 256,420,000 million gallons of fresh water is needed for the construction and maintenance of ice roads and pads, drilling operations, and camp use ([Table 2.10](#)). The ice roads and pads would be constructed of fresh water snow, ice chips, and water and would have a minimum depth of 0.5 feet.

Water for human use would either be hauled from an Alaska Department of Environmental Conservation (ADEC) approved water system or local lake water would be processed through the drilling contractor's ADEC approved water purification system.

CPAI plans to utilize water from previously approved lakes ([Table 1.2](#)) and new proposed lakes for this winter's activity authorized under Temporary Water Use Authorization (TWUA) from ADNR-Division of Mining, Land and Water (ADNR DMLW). CPAI has also requested approval to harvest ice aggregate from lakes ([See Section 2.1.3.1 Deviation Request](#)). A total of 78 lakes ([Figure 6](#)) would be used as water sources ([see Table 2.11](#) for more detail). Water withdrawal from fish-bearing water bodies would be authorized under Fish Habitat Permits from Alaska Department of Fish and Game (ADFG).

Water and ice chips would be pumped from permitted lakes and transported by trucks. All water intake hoses would have screens at the intake points to prevent entrapment of fish, regardless of whether the lake has been identified as fish-bearing. CPAI would comply with ADFG screen designs (including screen mesh no greater than ¼-inch) and would implement 0.5 feet per second or less intake velocity.

Snow cover would be removed from portions of lakes 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 removal (beyond the minimal amount required for vehicle access and water/ice withdrawal) is allowed from any non-fish bearing lake and grounded portions of fish-bearing lakes without additional approvals. Snow and ice chip removal from non-grounded portions of fish-bearing lakes must be approved by ADFG-Habitat Division and BLM on a case by case basis.

Lakes would be accessed via snow trail or ice road spurs from the main winter trail using the most direct route possible. Signs would be placed at lake access points to identify each permitted lake that is being actively used. Light plants would be placed on frozen lakes at the water houses and road intersections for safety purposes. Light plants are portable units about the size of a small generator unit with a stand of lights about 10 feet into the air. The light plants would be refueled on the frozen lakes ([See Sec. 2.1.6.1](#)) following CPAI's standard procedures for fuel transfers. All light plants would have 110% containment.

2.1.3.1 Deviation to BMP B-2d request

For CPAI's 2017-2018 winter exploration program in the NPR-A, they are requesting to use ice aggregate at ten lakes in addition to the maximum liquid water volume typically allowed for use ([Table 2.11](#)), which exceeds BLM's BMP B-2d.

CPAI submitted the following information to support a deviation from B-2d:

In some cases where the specific criteria set forth in BMP B-2 a) through f) are not met, each lake was evaluated based on its documented use by fish, viability and quantity of overwintering habitat, connectivity to nearby streams, and overall

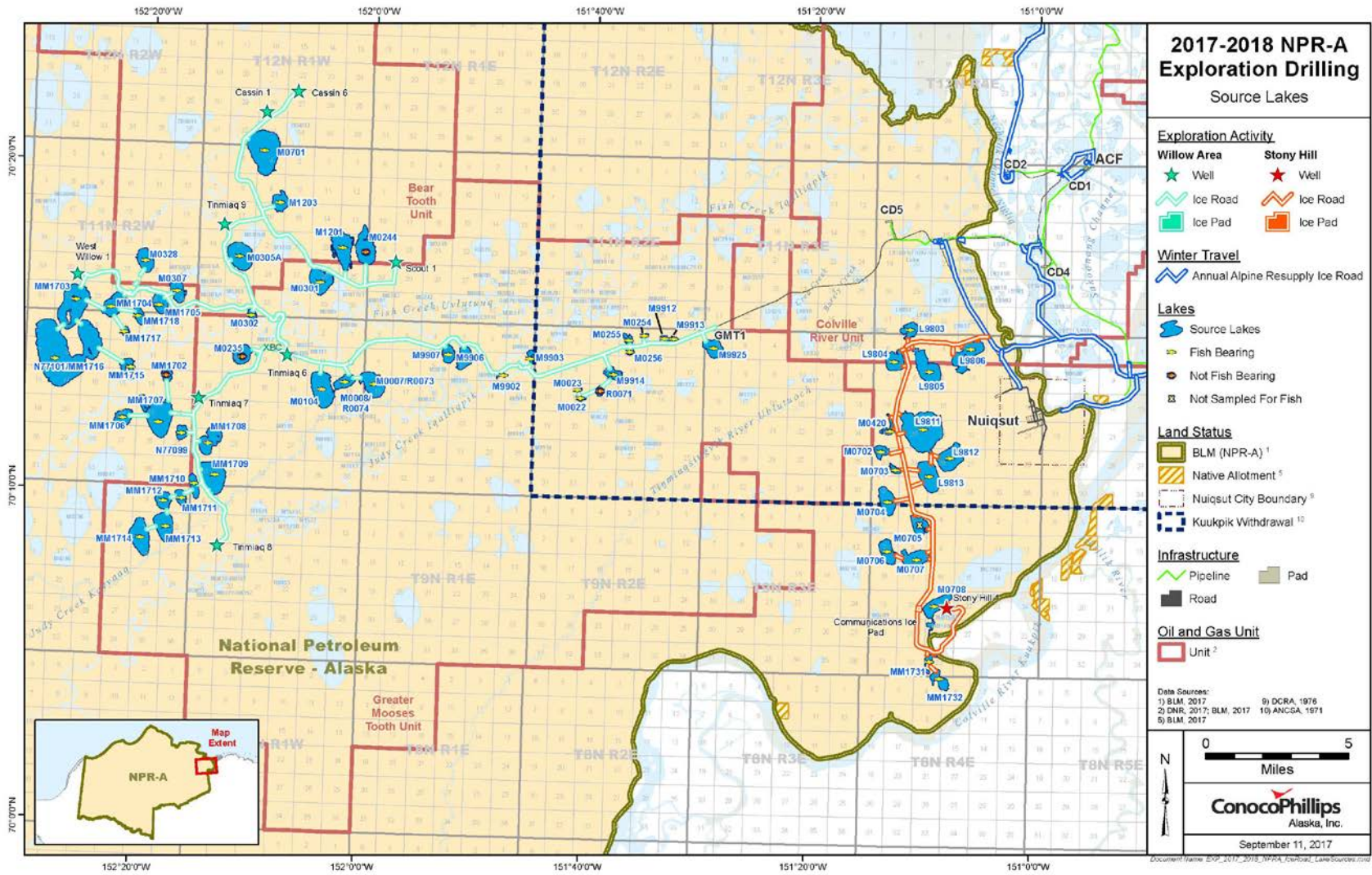


Figure 6: Applicant Submitted Map showing Water Withdrawal Lakes

drainage area available to recharge the lake each spring. In each case, the corresponding water volume request is for ice aggregate only, the withdrawal will not reduce fish overwintering habitat, and the overall volume requested is low enough that annual recharge is anticipated to occur rapidly each spring. Each of these lakes has been identified clearly in the lake withdrawal request tables and a justification for how the request will meet the objectives of B-2 has been provided.

Specifically, 10 lakes have been requested for use at overall volumes in excess of the standards in B2- a through c. However, for each lake, only ice aggregate collection is proposed. Of those lakes, 3 are shallower than 4 feet deep and are used seasonally by stickleback but are not deep enough to provide fish overwintering habitat. Each has been requested for use of ice only at less than 20% of total lake volume, which is consistent with BLM standards for assuring recharge and not affecting fish habitat. Three additional lakes used by ninespine stickleback have maximum depths in the 5 to 6 foot range and have minimal if any viable overwintering habitat based on evaluation of overall acreage of potential wintering habitat. To ensure potential overwintering habitat is not degraded only ice is requested from these lakes and would only be harvested from grounded ice areas of the lakes shallower than 4 feet deep. Total volume of water requested for removal as ice is 6% of total lake volume or less, which is well below the 35% criteria for recharge only. Potential overwintering habitat would not be degraded, and recharge would occur each spring.

Two additional lakes used by sensitive and resistant fish species have been sampled adequately by fyke net to support that they are not used substantially, if at all, by sensitive fish species for overwintering, likely based on limited overall habitat availability. Requested water removal as ice only from grounded portions of the lakes would not reduce potential overwintering habitat and volume removal would be less than 10% of total lake volume at each, which would recharge rapidly each spring.

One additional lake with sensitive and resistant fish species use likely does provide viable fish overwintering habitat. To ensure protection of that habitat, only ice would be removed from the lake, in portions of the lake shallower than 4 feet deep and grounded at the time of collection. Water volume removed as ice only would be 5% of the total volume. The lake is part of a substantial tundra stream/lake system and would be recharged rapidly each spring.

Only for one lake where a deviation is requested was recharge capacity difficult to ascertain from available imagery data. The lake is 5.5 feet deep and used by ninespine stickleback only. The only portions of the lake deeper than 5' are in isolated pockets and likely provide little overwintering habitat. We have requested to remove ice only from this lake and from areas shallower than 4 feet deep and grounded at the time of collection. Withdrawal volume, as ice only, would be less than 15% of total lake volume, consistent with BLM recharge only criteria of 35% in non-fishbearing waters. The requested use would not reduce fish habitat and would likely be recharged during spring.

Table 2.11 Water and ice Withdrawal Requirements by Source (BLM managed lands only)

Lake ID	Latitude (N) (N/AD83)	Longitude (W) (N/AD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG)	Sensitive Fish Species Captured ^a	Resistant Fish Species Captured ^b	15% of Water Under 7 ft of Ice (MG) *	30% of Water under 5 ft of Ice (MG) *	35% of Total Water (MG) *	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Deviation per BMP B-2?
L9803	70.25889	-151.18904	6.7	161	176.5	None	Ninespine stickleback	N/A	0.44	N/A	0.00	8.91	Yes
L9804	70.24263	-151.21213	5.2	244	236.0	None	Ninespine stickleback	N/A	0.00	N/A	0.00	17.44	Yes
L9805	70.23779	-151.15888	5.7	435	430.0	None	Ninespine stickleback	N/A	0.01	N/A	0.00	26.34	Yes
L9806	70.24957	-151.09729	6.8	362	423.2	None	Ninespine stickleback	N/A	14.63	N/A	10.2438	4.3902	No
L9811	70.20844	-151.16652	8.0	1034	1414.1	Arctic grayling, Broad whitefish	Ninespine stickleback	0.94	N/A	N/A	0.6552	0.2808	No
L9812	70.19413	-151.12577	8.1	384	501.2	None	Ninespine stickleback	N/A	9.74	N/A	6.8187	2.9223	No
L9813	70.18487	-151.15671	6.3	391	433.9	Arctic grayling	Ninespine stickleback	0.00	N/A	N/A	0.00	17.01	Yes
M0420	70.20733	-151.21644	6.0	126	91.0	Arctic grayling, Broad whitefish	Ninespine stickleback	0.00	N/A	N/A	0.00	9.04	Yes
M0702	70.19699	-151.22931	6.7	119	185.9	None	Ninespine stickleback	N/A	3.93	N/A	2.7489	1.1781	No
M0703	70.18769	-151.20702	6.2	57	72.0	None	Ninespine stickleback	N/A	0.21	N/A	0.147	0.063	No
M0704	70.17143	-151.21788	6.0	276	245.0	None	Ninespine stickleback	N/A	0.56	N/A	0.3948	0.1692	No
M0705	70.16008	-151.16967	<4	167	unknown	Not sampled	Not sampled	unknown	unknown	unknown	0.00	13.04	Yes
M0706	70.14639	-151.21721	6.2	236	303.0	None	Ninespine stickleback	N/A	3.79	N/A	2.6544	1.1376	No
M0707	70.14259	-151.17317	6.4	328	432.8	None	Ninespine stickleback	N/A	5.72	N/A	4.0068	1.7172	No
M0708	70.11917	-151.14527	28.9	323	1138.0	Northern pike, Broad whitefish, Round whitefish, Arctic grayling	Ninespine stickleback	69.98	N/A	N/A	67.521	2.46	No

Lake ID	Latitude (N) (N/AD83)	Longitude (W) (N/AD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG)	Sensitive Fish Species Captured ^a	Resistant Fish Species Captured ^b	15% of Water Under 7 ft of Ice (MG) *	30% of Water under 5 ft of Ice (MG) *	35% of Total Water (MG) *	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Deviation per BMP B-2?
MM1731	70.09211	-151.15208	21.9	81.9	272.4	Least cisco, Northern pike, Broad whitefish	Ninespine stickleback	15.23	N/A	N/A	12.945	2.28	No
MM1732	70.08182	-151.13422	26.7	109	142.2	Northern pike, Broad whitefish	None	3.7	N/A	N/A	2.6355	1.1295	No
M0007	70.22449	-151.98941	9.3	370	576.2	None	Ninespine stickleback	N/A	35.38	N/A	24.77	10.61	No
M0104	70.22102	-152.06759	5.5	514	618.0	None	Ninespine stickleback	N/A	0.32	N/A	0.00	42.30	Yes
M0235	70.23618	-152.18804	7.7	229	327.0	None	None	N/A	N/A	114.5	59.93	5.47	No
M0244	70.29105	-152.00802	6.7	420	235.2	None	None	N/A	N/A	82.3	32.93	14.11	No
M0245	70.25281	-151.58735	12.7	30	59.4	None	Alaska blackfish, Ninespine stickleback	N/A	4.68	N/A	3.99	0.69	No
M0255	70.25027	-151.61012	3.9	67	56.8	None	Ninespine stickleback	N/A	0.00	N/A	0.00	5.27	Yes
M0256	70.24439	-151.60801	9.0	30	48.0	None	Alaska blackfish, Ninespine stickleback	N/A	2.91	N/A	2.19	0.72	No
M0301	70.27511	-152.07456	9.9	365	466.6	None	Ninespine stickleback	N/A	20.69	14.48	6.21	20.69	No
M0302	70.25719	-152.17616	9.4	56	93.9	Least cisco	None	3.27	N/A	N/A	2.29	0.98	No
M0305A	70.28695	-152.19686	8.7	743	665.9	None	Ninespine stickleback	N/A	28.88	N/A	20.21	8.66	No
M0307	70.26838	-152.28894	7.0	227	298.2	None	Ninespine stickleback	N/A	3.32	N/A	2.32	0.99	No
M0701	70.34077	-152.16568	11.9	839	1152.9	Least cisco	Ninespine stickleback	7.39	N/A	N/A	5.18	2.22	No
M1201	70.29292	-152.04280	7.2	452	483.5	None	Ninespine stickleback	N/A	5.03	N/A	3.52	1.51	No
M1203	70.31484	-152.13875	9.0	218	328.2	None	Ninespine stickleback	N/A	16.49	N/A	11.54	4.95	No
M9901	70.23006	-151.81838	17.6	68	150.8	Arctic grayling	None	4.60	N/A	N/A	3.22	1.38	No
M9903	70.23982	-151.75726	18.8	71	134.0	None	Ninespine stickleback	N/A	9.88	N/A	6.92	2.96	No
M9906	70.23920	-151.85524	9.7	203	369.4	None	Potential	N/A	28.68	N/A	24.38	4.30	No

Lake ID	Latitude (N) (N/AD83)	Longitude (W) (N/AD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG)	Sensitive Fish Species Captured ^a	Resistant Fish Species Captured ^b	15% of Water Under 7 ft of Ice (MG) *	30% of Water under 5 ft of Ice (MG) *	35% of Total Water (MG) *	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Deviation per BMP B-2?
M9907	70.24069	-151.88001	9.5	148	235.2	None	Ninespine stickleback	N/A	16.50	N/A	12.19	4.31	No
M9912	70.25178	-151.55677	9.6	35	61.9	None	Alaska blackfish, Ninespine stickleback	N/A	3.37	N/A	2.93	0.44	No
M9913	70.25157	-151.54264	7.9	20	29.8	None	Potential	N/A	1.25	N/A	0.88	0.38	No
M9925	70.24747	-151.48285	3.9	212	95.3	None	Ninespine stickleback	N/A	0.00	N/A	0.00	19.06	Yes
MM1702	70.22530	-152.29977	7.4	89	113.1	None	None	N/A	N/A	39.6	15.84	6.79	No
MM1704	70.25945	-152.38413	11.1	316	364.4	None	Ninespine stickleback	N/A	13.26	N/A	9.28	3.98	No
MM1705	70.26069	-152.31546	7.0	205	274.7	None	Ninespine stickleback	N/A	4.15	N/A	2.90	1.24	No
MM1706	70.20343	-152.36022	12.9	171	191.0	None	Ninespine stickleback	N/A	17.28	N/A	12.09	5.18	No
MM1707	70.20431	-152.30801	6.7	657	622.6	Broad Whitefish, Arctic grayling	None	0.00	N/A	N/A	0.00	31.13	Yes
MM1708	70.19194	-152.23439	8.4	162	175.2	None	Alaska blackfish	N/A	3.61	N/A	2.53	1.08	No
MM1710	70.17117	-152.25340	10.0	136	308.1	None	Ninespine stickleback	N/A	31.17	N/A	26.38	4.79	No
MM1711	70.16356	-152.27127	10.4	122	241.7	None	Ninespine stickleback	N/A	20.43	N/A	14.30	6.13	No
MM1712	70.16227	-152.29868	10.8	197	324.0	None	Ninespine stickleback	N/A	17.67	N/A	12.37	5.30	No
MM1715	70.22447	-152.35725	11.7	150	269.6	None	Ninespine stickleback, Alaska blackfish	N/A	24.29	N/A	17.00	7.29	No
MM1717	70.24665	-152.36389	15.9	47	119.5	None	Ninespine stickleback	N/A	16.98	N/A	13.42	3.56	No
MM1718	70.25492	-152.34653	7.8	114	138.2	None	Ninespine stickleback	N/A	2.04	N/A	1.43	0.61	No
N77099	70.19638	-152.27436	6.9	107	121.4	None	None	N/A	N/A	42.5	17.00	7.28	No

Lake ID	Latitude (N) (N/AD83)	Longitude (W) (N/AD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG)	Sensitive Fish Species Captured ^a	Resistant Fish Species Captured ^b	15% of Water Under 7 ft of Ice (MG) *	30% of Water under 5 ft of Ice (MG) *	35% of Total Water (MG) *	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Deviation per BMP B-2?
N77101A	70.23182	-152.46791	25.1	1329	1546.0	Arctic grayling, Broad whitefish, Least cisco, Lake trout	Ninespine stickleback	36.67	N/A	N/A	25.67	11.00	No
N77101C	70.24185	-152.41704	18.2	483	145.8	Arctic grayling, Broad whitefish, Least cisco, Lake trout	Ninespine stickleback	22.03	N/A	N/A	15.42	22.03	No

Table 2.8 Key: * = Allowable Volume per BMP B-2; MG = million gallons; NA = not applicable

2.1.4 Drilling Operations Support

Support facilities at each drilling/testing location would include a satellite office camp, storage areas (e.g., fuel storage, drilling waste storage), and maintenance buildings. A remote camp (XBC Camp-Canning Camp) would be placed on an ice pad at a location near Lake M0235, (Figure 1) to facilitate the construction activities of the snow road and ice pad, and provide support during drilling operations. The XBC Ice pad would be approximately 500 feet × 500 feet. There would be up to nine well ice pads and each one would be approximately 800 feet × 800 feet. The communication ice pad (Communication Tower #1) and the airstrip ice pad would be approximately 200 feet x 200 feet each.

Camps would have the capability to accommodate up to a total of 480 people. The Canning Camp at the XBC Camp Location can house 30 people; the Doyon 141 Rig Camp can house 100 people, the Doyon Rig Camp at Stony Hill can house 50 people and five Stallion Camps that can house up to about 60 people each. Equipment that may be used at each of the Stallion Camps is shown in Table 2.12.

Table 2.12 Stallion Rig Camp Equipment

Equipment
2,500 potable water tanks in heater skidded module (2)
6,000 gallon diked Diesel Fuel Tanks
12,000 Gallon Waste Water Truck
Smoke Shack
Dumpster
Back-up Generator
Move Equipment: Tractor-Trailer
Move Equipment: Bed Truck with Trailer
Move Equipment: 966 Loader
Move Equipment: Sow for Camp Move

Three communication towers would be needed to support the exploration program. Communication tower 1 is approximately 80-feet high and will be placed on a 200-feet by 200-feet (or acreage equivalent) ice pad adjacent to the Stony Hill access ice road (Figure 1). Communication tower 2 is approximately 120 feet high and would be placed on the XBC ice pad. Communication tower 3 would be located at the aircraft support ice pad and would be approximately 25 feet high. Communication towers one and two would be anchored with guy wires attached to concrete blocks that are on the ice pads and used as Deadman anchors. The Deadman anchors weigh 11,000 pounds and are 3.6 feet by 6 feet by 6 feet. Bird diverters would be used on guy wires. All communication towers are temporary and would be removed at demobilization.

2.1.5 Drilling and Well Testing

CPAI proposes to drill up to five new wells during the 2017-2018 season and reenter one well. [Table 2.13](#) has a list of equipment that may be used for the drilling operations. The Stony Hill 1 well would be drilled using the Doyon Arctic Fox Rig. All the other wells drilled this season would be drilled using the Doyon 141 drill rig. The well bore design would be similar to previous North Slope exploration wells. The wells are authorized under Drilling Permits issued by the Alaska Oil and Gas Conservation Commission (AOGCC) and BLM Application Permit to Drill. Due to the exploratory nature of the wells and federal regulations; nearly all down-hole information is confidential. No reserve pits would be constructed.

Table 2.13 Drilling Equipment List

Equipment	Quantity	Equipment	Quantity
Pump houses for water extraction from lakes	2 – 4	Welding Trucks	1 – 2
Greywater/Blackwater trucks servicing camps	1 - 2	Cranes	1 – 2
Conductor Drilling Rig	1	Pick-ups/vans	10 – 15
Cementing Pumping Unit	1	Bed Trucks	2 – 4
Drilling Rig – Doyon 141	1	Supersuckers	1 – 2
Drilling Rig – Arctic Fox	1	Mud lab	1
300 bbl. Vac trucks	2 – 4	E-line logging unit	1
Sows or large trucks for moving the rig modules	2 – 3	Winch Trucks	1 – 2
Cementing pumping unit with product silos	1	IWD/MWD shack	1
Hot oil displacement/pumping unit	1	Mobile light towers	4 – 8
Mudlogging shack – shown on the as-built	1	Mobile Heaters	4 – 8
Cats for assisting with rig moves	1 – 2	Fuel Trucks	1 -2
325 bbl. Water trucks	2 – 4	Backhoes/excavators	1 – 2

The Tinmiaq 6 Well would be used for testing only and no rig would be used at the site. [Table 2.14](#) has a list of equipment that may be used during the well testing activity. The P&A wells would use a Coil Tubing Unit (CTU) to complete the P&A work.

Table 2.14 Well Testing Equipment

Equipment	Equipment	Equipment
Expro Flow back unit	400 bbl upright tanks (4)	570 bbl tanks (7)
100 bbl Sand (Relief) Tank	Genset/Air Compressor	Lab
Choke House	Glycol Boiler	Hose Connex
Sand separator	Vertical Gas Scrubber	Tool House
Mobile Light Plants (4-6)	25 KW Generators (2-3)	Fuel Trucks (1-2)

Equipment	Equipment	Equipment
Mobile Heaters (8-10)	90 Foot Flare Stack	Trucks to transport crude (3-5)
Pick-up Trucks (8-15)	Crane	Slickline Unit
Coil Tubing Unit	Nitrogen pumping unit	E-line logging unit
300 bbl vac trucks (1-2)	Well house	N/A

Well evaluation through hydro-fracture stimulation and testing may be performed at any of the locations after completion of well drilling operations. Equipment that may be used during this process is listed in [Table 2.15](#). The current plan is to retain each location for future testing, except for Stony Hill 1 well, which, if it is not a success, would be P&A'd after drilling and testing this season.

Table 2.15 Frac Equipment

Equipment	Equipment	Equipment
Treatment Control Vehicle	Tractors (12)	Growler/Blender
Hardline "Missile"	ADP/Blender	Frack Pumps (6)
Hardline trailer	Sand Castle	Chemical trailer
Ball-drop trailer	Crane	Compressor Connex
Chemical Van/trailer	Generators (3)	Heaters (12)
Tiger-style Tank	Light Plants (4)	
400 bbl Pop-off Tank	225 bbl Open-top tank	LRs Down-hole Pump
Treesaver w/power-pack	Transport box	Parts Box
LRS Down-hole Pump	Loader	290 bbl vac truck
90 bbl Fuel Truck	Pick up Trucks (~6)	N/A

Production tests at each well would be performed as needed after production casing is set/cemented and the well completed. Following completion, the well will be hydro-fractured to enhance productivity. Testing may include extended flow periods to determine the productivity of the well. Produced fluids would pass through an adequately sized separator system to prevent oil carryover into the gas stream. Oil from testing would be held in tanks (within ice berms) until the testing is completed. After testing, the oil would either be injected back into the formation from which it was produced or hauled to Alpine or Kuparuk and processed through their facilities. Produced gas will be flared.

2.1.6 Fuel

Fuel storage capacity totaling approximately 273,800 gallons is expected to be required to support the NPR-A exploration program. Fuel would be stored in multiple fuel containers and placed in lined, bermed fuel storage areas. All fueling and transfer operations would be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPA1-005) and liners would be used as required by the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). The expected fuel storage in support of the proposed project is provided in [Table 2.16](#).

Each drilling contractor holds a Spill Prevention Control and Countermeasure Plan (SPCC) for its fuel storage facilities associated with their drilling operations. The well testing companies hold SPCC plans for their testing tanks. Additionally, CPAI has a SPCC plan for exploration activities. A spill technician with Alaska Clean Seas and a Field Environmental Coordinator would be on site during drilling and on site at the XBC location.

Table 2.16 Fuel Storage Quantities

Location	Number of Gasoline Tanks	Number of Diesel Fuel Tanks	Quantity Per Tank (Gallons)	Total Amount (Gallons)
XBC Ice Pad	1	2	24,000 Diesel 9,800 Gasoline	57,800
Well Sites (6)	0	1	24,000	144,000
Potential P&A Sites (3)	0	1	24,000	72,000
Totals	0	4	24,000	273,800

2.1.6.1 Fuel Transfer, BMP A-5 Deviation Request

CPAI proposes to refuel light plants and pump houses on lakes and some of the well locations are within 500 ft of standing water. CPAI has requested a deviation from BMP A-5 which states:

A-5 Best Management Practice

Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment.

Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception that small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, are permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

CPAI's justification:

CPAI proposes to refuel light plants and pump houses on water source lakes. Moving light plants off of lakes for refueling is impractical as light plants would require an additional vehicle to move them every 12 hours for refueling. Moving pump houses off lakes for refueling is not practical or safe as they are self-contained modules which are heavy and would have to be moved using a winch truck and a flatbed truck. These are also fueled every 12-hour shift. CPAI uses secondary containment during all fueling operations and the pump house fuel tank is also contained inside the pump house. CPAI has rigorous fuel transfer protocol and procedures.

2.1.7 Waste Management

Wastes would be handled according to the comprehensive waste management plan required by the BLM under NPR-A IAP/EIS BMP A-2, as summarized below.

Water-based drilling muds would be used, which include additives used to maintain desired drilling fluid properties and density. Excess drilling mud would be transported to an approved Class II injection well at Kuparuk, or through the grind and inject facility at Prudhoe Bay. Prior to hauling away for disposal, the cuttings and liquids would be temporarily stored in cutting boxes inside ice-bermed drilling waste storage cells or tanks at the drill sites.

During drilling, CPAI anticipates having up to six leakproof cutting bins at each drilling well location. Each of the cutting bins would be within an ice cell as secondary containment. The ice-bermed waste storage cells would be permitted by the ADEC Solid Waste department. It is anticipated that up to 20,000 cubic feet of cuttings could be generated at each drill site from the drilling wells. The cell dimensions would be as large as 100 feet x 150 feet x 3 feet, giving a gross volume of 45,000 cubic feet. The thickness underneath the temporary drilling waste storage areas would be approximately 2 feet. Since there is a State requirement for 2 feet of freeboard, the usable storage volume is one third of gross volume (20,000 cubic feet for each storage cell). The storage cells may be constructed with smaller dimensions and higher berms, as long as there is 2 feet of freeboard above the cuttings. The volume of wastes placed in each storage cell would be minimized as would snow accumulation in the cell.

Upon completion of activities at the well sites, the ice-bermed drilling waste storage cells would be broken up and cleaned of contamination. Material cleaned from these cells would be hauled to, Prudhoe Bay or Kuparuk for disposal at an approved Class II injection well. An average of 20,000 gallons per day (gpd) of waste liquid from the well may require disposal, although all efforts to minimize this amount will be undertaken.

Solid, non-burnable waste would be deposited in large dumpsters or other suitable containers located at each site. These containers would be back-hauled to the NSB landfill at Prudhoe Bay. The food waste that could attract wildlife would be stored in secured wildlife proof container while waiting for pickup.

Camp wastewater would be hauled primarily to the Kuparuk Operations Center Waste Water Treatment Facility or alternatively the wastewater treatment facility at Alpine may be used. Wastewater would not be directly discharged by the camps. All treatment systems used will meet the ADEC requirements. Each rig camp could generate about 6,500 gpd of domestic wastewater.

2.1.8 Air Emissions

Sources of air emissions from the operation are rig engines, camp generator engines, steam generators, mobile non-road engine and construction equipment, used oil burners, hot-air heaters, light plants, incinerators, and potentially well test flaring equipment. CPAI has applied for ADEC authorization for the NPR-A exploration locations under Minor General Permit #1 for Oil and Gas Drilling Rigs. BMP A-9 requires the use of Ultra-low sulfur diesel and evaluation of the potential for hydrogen sulfide (H₂S) release indicates that significant quantities are not expected at any drilling location. Measures and precautions associated with hydrogen sulfide are addressed in the Application for Permit to Drill filed with the BLM.

2.1.9 Contingency Plans

Contingency plans are described below.

2.1.9.1 Wildlife Protection and Encounter Plans

CPAI has a Polar Bear Avoidance and Interaction Plan and a Wildlife Interaction Plan that they have updated over the years, with input from the United States Fish and Wildlife Service's (USFWS) Marine Mammal Management Office. The latest version is from 2016. An approved orientation program is required for all personnel working in the NPR-A, which includes a segment on polar bear avoidance and interaction. These actions, along with the required Subsistence Plan, provide wildlife protection measures.

2.1.9.2 Oil Discharge Prevention and Contingency Plan (ODPCP)

The Applicant is required to have approved oil spill response measures in place to meet Federal and State requirements. CPAI must have a site-specific ODPCP approved by ADEC that is considered sufficient to meet BLM requirements.² CPAI is requesting a minor amendment to the "North Slope Exploration ODPCP" for the NPR-A exploration locations.

The ODPCP contains information on immediate response actions, receiving environments, spill cleanup, mobilization response times, and well control. The ODPCP encompasses standard response methodology and resources for the response. Additionally, the BLM inspects the wells and pads during construction and drilling. The Applicant's approved ODPCP, along with approved spill control equipment and supplies will be kept on site. Phone service will be available 24-hours a day at the drilling camp.

No drilling will begin until the well pad is fully constructed and accessible by packed snow trail or ice road; the period of active drilling is subject to seasonal restrictions set in the ODPCP approval. In accordance with the ODPCP condition of approval, CPAI will cease drilling in hydrocarbon-bearing formations and isolate said zone by April 24th, to ensure the effectiveness of planned spill response methods prior to the onset of spring breakup.

The ODPCP contains CPAI's blowout prevention details and their plans to deal with a blowout in the unlikely event that one occurs.

2.1.9.3 Spill Prevention and Countermeasure Plan (SPCC)

An SPCC Plan provides guidelines for pollution prevention and addresses secondary containment where fuel and hazardous materials are stored in quantities of 1,320 gallons or more. The drilling contractor holds an SPCC plan for its fuel storage facilities associated with their drilling operations and the well testing company holds an SPCC plan for their testing tanks. Additionally, CPAI has a SPCC plan for exploration activities.

2.1.9.4 Waste Management Plan

The applicant is required by the 2013 NPR-A IAP/EIS ROD BMP A-2 to submit to the AO for approval a Waste Management Plan for all phases of exploration and development. CPAI's plan is summarized in Section 2.17 Waste management above.

² CPAI ODPCP is available for review at ADEC.

2.1.9.5 Hazardous Materials Emergency Contingency Plan

The applicant is required by the 2013 NPR-A IAP/EIS ROD BMP A-3 to have a Hazardous Materials Emergency Contingency Plan. Conoco's North Slope Exploration ODPCP contains procedures for immediate spill notification, response, and cleanup in the event of, or threat of, a hazardous substance spill and includes spill reporting information (see ODPCP, Part 1 - Response Action Plan). This information is applicable to all hazardous substance spills (e.g. not only a worst-case discharge).

The ODPCP addresses appropriate procedures for fuel/hazardous substance handling/transfer and also references the *North Slope Environmental Field Handbook* and the *Alaska Safety Handbook*. Combined, these documents describe the proper procedures employees and contractors must use for handling fuel/hazardous substances.

2.1.9.6 Weed Control Plan

CPAI would wash (either by steam or high pressure water) any vehicle that drives on the Dalton Highway (also known as the haul road) and delivers goods and materials to locations in the NPR-A via ice road. Washing would be completed once each year between 1 October and 31 December. The truck, trailer number, and the date they were washed would be documented. Any equipment that is permanently based or dedicated to the North Slope and does not travel the haul road is washed as part of standard operating procedures and scheduled maintenances.

CPAI would communicate with all contractors and work with them to ensure that all vehicles that may travel by ice road into the NPR-A have been washed prior to entering the NPR-A for the upcoming winter exploration season 2017-2018.

2.1.9.7 Orientation Plan

CPAI requires all North Slope employees and contractors to complete an 8-hour unescorted training program provided by the North Slope Training Cooperative (NSTC). All trainees receive a Field Environmental Handbook, an Alaska Safety Handbook, and a North Slope Visitor's Guide. The unescorted training includes review of the Alaska Safety Handbook, and sections on personal protective equipment, camps and safety orientation, hazard communication, Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) Level 1, and Environmental Excellence. The NSTC also provides 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.

Site specific training, such as CPAI's BLM-approved NPR-A orientation program, would be conducted as required. The program is required for all personnel who would be working in the NPR-A. Personnel receiving NPR-A training would be provided with additional information regarding CPAI's proposed winter operations. The NPR-A training module teaches awareness of the environmental, social, and cultural concerns that relate to NPR-A. Topics included in the training are: the importance of not disturbing archeological and biological resources and habitats; guidance on how to avoid disturbing of the aforementioned; and avoidance of conflicts with subsistence hunting and fishing activities, and pertinent mitigation. All involved personnel are

required to attend the class once per year. CPAI and its contractors are required to maintain records of all personnel who attend the program for as long as the site is active, but not to exceed the 5 most recent years of operations.

2.1.9.8 Other plans

The North Slope operating fields have an Incident Management Team (IMT) which follows the Incident Command System. The IMT is on call 24-hours per day. Personnel involved in an emergency situation would notify Alpine Security who would direct the IMT to respond. An Environmental Health and Safety Policies and Procedures manual is available on CPAI's intranet web page and Emergency Response Plans are available at the individual facilities.

2.1.9 Abandonment and Restoration

Upon completion of drilling and evaluation operations, all debris would be hauled to an approved disposal site outside of the NPR-A. The ice pads would be chipped or scraped to pick up any spills and the scrapings would be hauled to an approved disposal well. The exploration wells would be suspended for future evaluation, except for Stony Hill 1 which would be P&A'd prior to demobilization from the site, as previously mentioned. CPAI may take the opportunity to P&A three other wells in the BTU. Any well abandonment or suspension plans would be in accordance with applicable BLM and AOGCC regulations, and would be approved prior to enactment. Final site closure would be approved by the appropriate regulatory agencies.

After the ice road and ice pads melt in the summer, CPAI would perform an inspection of each location to pick up any remaining debris and to look for potential tundra damage. Prior to this activity CPAI would file a plan of operations for approval from the BLM.

2.1.10 Community Relations

Local Hire

CPAI states that they are committed to continuing their partnership with local contractors and businesses through competitive bid contracting opportunities. When reasonably foreseeable to do so, CPAI has committed to hire and, where appropriate, to provide training to Kuukpik shareholders, Nuiqsut residents, and Alaska Natives. When appropriate, local resident hire would continue to 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.

In previous years CPAI has participated in job fairs held in the village of Nuiqsut. The job fairs are an opportunity for CPAI to inform Nuiqsut and other North Slope residents about jobs available with CPAI's winter activities on the North Slope. Attendees can gather information on the specific jobs available with CPAI and its contractors, the time period the jobs would be available, and the pay scales. The job fair is an excellent opportunity for local residents to become familiar with the planned winter operations and to talk with the people who will be hiring residents.

Subsistence. The project area is recognized as a subsistence use area for Nuiqsut and Utqiagvik. The November 1 public meeting in Nuiqsut and other meetings and consultations included subsistence discussions. The Applicant plans to continue consultation with subsistence users and implement mitigation measures, as necessary. CPAI has prepared a Subsistence Plan to satisfy a requirement of the 2013 NPR-A IAP/EIS ROD BMP H-1. The document would assist in the identification of potential issues and response actions. Prior to issuing development permits, the NSB solicits public review including State and Federal agencies, local officials, residents, and private property owners in the affected area.

2.2 Possible Future Action

Exploration drilling is necessary to verify the presence of oil, drilling may not result in discovery of potentially producible resources. If a discovery is made, it may take a few years to conduct additional study and design before the project is ready to submit for development approval to the BLM and other agencies. Each phase of decision-making requires additional, site-specific environmental review and potential mitigation, as well as additional environmental protection measures.

BLM regulations for a Permit to Drill provide the option of deferring plans for proposed facilities (Subsequent Operations under 43 CFR 3160). Based on the uncertainties associated with wells to be drilled in the proposed program, CPAI has elected to defer planning for future facilities in regard to this years exploration. However, field development in and around the NPR-A has been discussed in previous evaluations, which are incorporated by reference. (IAP, GMT1). The area likely would be developed and operated in a manner similar to that recently approved for the GMT1 Project, incorporating relevant design and environmental protection measures required by the 2012 IAP/EIS and the associated ROD.

2.3 Alternatives

The IAP/SES evaluated alternatives based on national economic security needs and broad environmental issues. As a result, the 2013 ROD includes BMPs that limit the range of exploration alternatives. This EA is tiered to the broader alternatives analyzed in the IAP/EIS and more specific alternatives evaluated in subsequent EAs, which have been incorporated by reference ([Appendix D](#)).

2.3.1 Alternatives Considered but Eliminated from Detailed Analysis

This EA is tiered from the broader alternatives analyzed in both the 2012 IAP/EIS and 2014 GMT1. The proposed action itself (i.e. drilling a specified number of exploration wells on specific oil and gas leases in the NPR-A) significantly limit alternatives for the location and timing of exploration. Locations of leases with oil and gas prospects limit the options for feasible drill site locations and access routes. Therefore, only a few alternatives for exploration are possible. Some alternatives considered, but eliminated from detailed analysis are described below.

The first of these alternatives is to reduce the number of wells approved for drilling. While this project includes the drilling of five wells in one season by one company, there have been years in the past that multiple companies have proposed similar or more well numbers than the proposed

action ([Appendix D](#)). Within a unit, a company is obligated to continue drilling to delineate the resource and an associated future participating area (43 CFR 3137). This alternative would be contrary to the terms of CPAIs's leases, which allows them to have a drilling program on their leases after going through the review process for a particular well. Leases instruct leaseholders to exercise reasonable diligence in developing and producing, while preventing unnecessary damage to, loss of, or waste of leased resources. This alternative would not meet the purpose and need.

The second alternative considered is the shared use of ice road/airstrips. There may be an opportunity for shared use of parts of the ice road by both industry and non-industry parties however BLM has not received any proposals that would allow for the shared use of ice road/airstrips as of the writing of this EA. If BLM does evaluate any such proposals, this option would be considered.

The third alternative initially considered in this EA involves decreasing the number of lakes that CPAI uses for water removal and the amount of water allowed to be withdrawn overall. However reducing the number of lakes would require more water withdrawal from the lakes that were used instead of spreading the total amount among more lakes. As for reducing the amount of water, the analysis of the amount requested for withdrawal ([Section 4.1.1](#)) determined that this amount would not harm the resource. Since this alternative would not meet the purpose and need of the project, the alternative was eliminated from detailed analysis.

2.3.2 Alternative B No Action

With the no-action alternative, exploratory drilling at five locations under existing, valid oil and gas leases would not be allowed as proposed. Permit applications to the BLM would be denied, and no access of 122 miles of ice road/snow trail construction, no ice drill pads, no use of up to 255.67 MG of water (project total) from 78 water supply lakes, no drilling of up to five exploratory wells, testing at one well or P&A of three wells on Federal Lands in the NPR-A would be allowed. While this alternative is contrary to the current Administration's policy and lease rights, analysis is required by NEPA.

2.3 Conformance

The proposed action is in conformance with the NPR-A IAP/EIS (USDOI BLM 2012) and associated ROD (USDOI BLM 2013), the National Petroleum Reserve Product Act (NPRPA), Federal Land Policy Management Act (FLPMA), Alaska National Interest Lands Conservation Act (ANILCA), Endangered Species Act, Executive Order (EO) 11988, and EO 11990.

In the NPR-A IAP/EIS (USDOI BLM 2012), the BLM evaluated the direct, indirect, and cumulative effects of winter access in the NPR-A. This analysis concluded that the stipulations and BMPs provided adequate protection for surface resources and subsistence activities in the planning area.

As part of the most recent analysis, the BLM considered site-specific evaluations of exploration programs in the planning area over the past years, all of which received a Finding of No Significant Impact by the BLM. Findings for these winter programs included analysis of Threatened and Endangered Species, Essential Fish Habitat (EFH) and Subsistence Use under ANILCA 810, as well as coordination with the State Historic Preservation Office. In addition to

BLM permits, other required Federal, State, and local authorizations were issued. More recent analyses of development in the GMTU (GMT1 SEIS, BLM 2014) found that subsistence uses may be significantly restricted, as did the finding for the ASDP (BLM 2004). Cumulative effects for all recent NPR-A analyses have had findings that subsistence uses may be significantly restricted. All impacts have been thoroughly analyzed in these documents and feasible mitigation measures have been established. The currently proposed activity will result in no new significant impacts.

Chapter 3 Affected Environment

3. Introduction

Chapter 3 describes the aspects of the human environment that may be affected by implementing Alternatives A or B. Resources and resource values analyzed in this EA are aspects of the human environment. The CEQ regulations discuss “human environment” (40 CFR 1508.14) as broadly relating to the biological, physical, social, and economic elements of the environment. The project area refers to the lands enclosed within the exterior boundaries of the priority and alternate route selection ([See Figure 1](#)).

Environmental characteristics of the general project area have been extensively described in the NPR-A IAP/EIS (USDOI BLM 2012, Vol. 1, Chapter 3) and SEIS/ASDP/GMT1 (USDOI BLM 2014, Vol 1, Chapter 3) to which this analysis is tiered, with some site-specific features described below. Proposed activities would take place on the Arctic Coastal Plain, where temperatures average below freezing for 8 months of the year. A dramatic change to higher temperatures and longer day length occurs during the other 4 months. Annual precipitation is low, averaging 8 inches per year, with more than half falling as snow. Snow cover is typically established in late September/October and disappears late May/mid-June.

The topography of the project area is generally flat to gently rolling, dominated by permafrost-related geomorphic features including polygonal patterned ground, shallow lakes, and extensive areas of wetland interlaced with small, meandering streams. Permafrost ranges from 650 to 1,330 feet deep, with an active thaw layer typically 1 to 2 feet deep. Residents of Nuiqsut commonly use the project area to harvest subsistence resources.

All of the nine areas possible proposed activity sites this winter have populations of willow trees to some degree, grasses and tussocks. [Appendix A](#) has photographs of each location showing the vegetation at the site. The proposed Stony Hill location ([Photograph 2](#)) has tall abundant willows growing on site.

CPAI states that willows will be gently laid over and covered with snow to encapsulate them prior to building ice pads. Ultimately, ice protects the willows buried under it. This has proven to be effective with no adverse effects on the willows after melting.

CPAI tries to stay away from willows as much as possible, but sometimes it is a necessity for locations and roads. CPAI retains a plant biologist from ABR Inc. who is well versed in willow resistance and recovery and CPAI asserts that in the rare case where willows have been affected by ice roads and pads, they generally survive the impact and regenerate quickly.

Based on the proposed project and the issue identification in [Section 1.5](#), the following discussion of the affected environment covers those issues that warranted further consideration within this EA: Fish and Water Resources, Subsistence, Sociocultural Systems, and Environmental Justice.

3.1 Issue 1: Fish and Water Resources

Details on fish species and water resources in the region can be found in the NPR-A IAP/EIS (USDOI BLM 2012) and the GMT1 Development Supplemental EIS (USDOI BLM 2014). For consideration of fish in lakes (BMP B-2), species are classified according to their susceptibility to low levels of dissolved oxygen. Alaska blackfish and ninespine stickleback are considered “resistant” due to their greater tolerance to low dissolved oxygen while all other species in the region are considered “sensitive”.

3.2 Issue 2: Subsistence

Nuiqsut’s subsistence uses are described in the NPR-A IAP (BLM 2012, § 3.4.3) and the GMT1 SEIS (BLM 2014, 3.4.5). A recent overview of Nuiqsut subsistence uses (SRB&A 2017) combines data gathered from the 1970s to as recently as 2015. Nuiqsut residents use a large area centered on the community to harvest subsistence resources. The use area extends west as far as Teshekpuk Lake or, in more recent years, to Atqasuk. Winter furbearer hunting and trapping activities, which involve distant travel by snowmachine, account for much of the broader extents of overland use. Areas overland to the west of Nuiqsut (including the Fish Creek and Willow prospect areas) are among the community’s most concentrated caribou hunting areas. The area is a particularly sensitive subsistence use area: at the request of local residents, a 3-mile buffer was established on either side of Fish Creek in 1998 that precludes permanent development. Much of the proposed activity in the GMTU, Bear Tooth, and Willow prospect is also located within the current boundaries of the Teshekpuk Lake Special Area (TLSA), which was expanded with the 2013 IAP to include valuable habitat for shorebirds and the Teshekpuk Lake Caribou herd. That plan made the lands in the easternmost part of the TLSA available for oil and gas leasing (or accommodated existing leases) because the area offers the greatest potential for oil development.

3.3. Issue 3: Sociocultural Systems

Sociocultural systems in Nuiqsut are described in the NPR-A IAP (BLM 2012, § 3.4.4) and the GMT1 SEIS (BLM 2014, § 3.4.2). Nuiqsut is a predominantly Inupiaq community located on the western bank of the Nigliq Channel of the Colville River delta, and its history, social organization, economic organization, community institutions, community health and welfare, and population and employment are described in these previous analyses.

3.4 Issue 4: Environmental Justice

Environmental justice is defined in EO 128989 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* which requires that proposed projects be evaluated for disproportionately high and adverse human health or environmental effects. The minority population of Nuiqsut meets the guidelines for considerations of environmental justice issues. BLM 2014 (§ 3.4.7) provides the most recent description of the affected environment for environmental justice in the context of oil development near Nuiqsut.

Chapter 4 Environmental Impacts

4. Introduction

Activities proposed by CPAI are similar in type to previously authorized winter exploration activities in the NPR-A over the past 17 plus years (See Appendix D). All of these programs have been approved and monitored based on full implementation of relevant restrictions, protective measures, and the mitigation set forth in the applicable RODs, as well as state and local permits. To date, authorizations to conduct similar winter exploration activities in the NPR-A have resulted in no long-term direct and indirect impacts to access to subsistence uses. The SEIS for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth One Development Project found that both the direct and indirect and the cumulative impacts to subsistence likely to result from the project would be significant.

Because the type of proposed activities are not substantially different from those previously evaluated, this NEPA analysis will focus on impacts due to the project-specific/site-specific differences of the proposed action.

4.1 Direct and Indirect Effects

The proposed action is built on experience gained from decades of similar operations on the North Slope. This EA is tiered from the 2012 NPR-A IAP/EIS and its ROD and 2014 SEIS/ASDP and its ROD. Related discussions of impacts are found in: 2012 NPR-A IAP/EIS, Vol. 2, Chapter 4.5 (Environmental Consequences of Alternative B-2, the preferred alternative).

Issues specifically identified in [Section 1.5](#) for further analysis in this EA are discussed below.

4.1.1 Issue 1: Fish and Water Resources

Proposed Action

Refueling on lakes

CPAI has requested a deviation to BMP A-5 in order to refuel light plants and pump houses on lakes as well as other equipment at well locations within 500 ft of standing water. The potential impact related to this activity is impaired water quality and contamination of fishbearing waters. Refueling equipment in place that is already in containment is less likely to lead to a spill than transporting the equipment outside a 500 ft buffer for refueling every 12 hours, which is also impractical. Required operation plans for handling fuel (including spill prevention and contingency plans) mitigate the risk of impacts to waterbodies during fuel transfers. Should refueling protocols or equipment fail, spilled fuel on ice and snow can be cleaned up effectively by removing all contaminated material from the site before it can enter liquid water. Refueling trucks will only be driven onto lakes for short periods of time to fill up equipment, which presents less risk for spills than maintaining a larger fuel cache at each location. Given the protective measures and the season of the activity, measurable impacts to fish and water resources are unlikely.

Ice airstrips on lakes

CPAI has requested a deviation to BMP B-2g in order to build an ice airstrip on ungrounded ice at two fish-bearing lakes, M0007 and M0305A. In general, removal of snow from ungrounded ice on fish-bearing waterbodies is limited in order to reduce the risk of causing increased ice growth that could impinge on fish overwintering habitat space. Exceptions for operationally necessary actions are allowed under BMP B-2g (e.g. water pumping stations), although ice airstrips are not specifically listed. However, an airstrip on grounded ice could heave or buckle and poses a greater safety risk than an airstrip on ungrounded ice. Furthermore, the lakes in question are relatively large (M0007 = 370 acres and M0305A = 743 acres) and deep enough that a majority of each lake should remain ungrounded. As such, the airstrips and associated aprons would be a small proportion of the total ungrounded ice area. Planned measurements of ice thickness on and around the airstrips by CPAI using GPR and/or ice augers will assist in evaluating the effect of the airstrip on lake ice thickness (see Section 4.4). No refueling of aircraft would occur on these lake, but rather at Alpine or Kuparuk. As such, measureable impacts to fish and water resources are unlikely.

Lake water use

The primary potential impacts to fish and water resources from winter lake-water use include effects on overwintering fish habitat and post-winter hydrology, as lowered water levels can affect habitat space and connectivity (Heman et al. 1969; Gaboury and Patalas 1984; Cott et al. 2008a).

The chief concern for utilizing liquid water from lakes during the winter is that dissolved oxygen (DO) might be reduced. Depletion of DO, caused by overcrowding or over-demand by biological and chemical processes, can result in fish mortality (Schreier et al. 1980; Schmidt et al. 1989; Reynolds 1997) as well as non-lethal effects (Kramer 1987; Evans 2007). Due to the lack of information supporting liquid water use guidelines in the early 2000s, water withdrawal lakes were monitored in a variety of investigations between 2003 and 2011 (e.g. Hinzman et al. 2006; Hilton et al. 2009). In an experimental approach used for a study in the Canadian Arctic (Cott et al. 2008b), removing 10% of total lake volume did not have an effect on total volume-weighted DO, while removing 20% had a substantial impact and effectively reduced fish overwintering habitat by about 25%. While this indicates that winter liquid water withdrawals can reach a threshold that significantly effects fish, DO changes have not been apparent at current levels of withdrawal on the North Slope (Hinzman et al. 2006; Chambers et al. 2008). Furthermore, the BLM is not aware of any observations of fish mass mortality, or “winterkill”, at water source lakes after ice has melted in the spring.

The natural variability of DO in lakes is high on the Arctic Coastal Plain (ACP) and can be largely linked to physical lake metrics (White et al. 2008; Leppi et al. 2015). As such, natural lake properties in the Arctic have been the best predictors of oxygen depletion during the winter rather than pumping (Chambers et al. 2008). It is generally agreed upon with State regulatory agencies that current levels of liquid water being permitted in the Arctic are broadly protective of lake resources, as the State follows guidelines similar to those in BMP B-2 regarding liquid volume allowances when Alaska Department of Fish & Game issues Fish Habitat Permits (FHPs) and Alaska Department of Natural Resources issues Temporary Water Use Authorizations (TWUAs). If increases above current liquid water guidelines were considered in the future, alternative evaluation approaches would be required and should integrate site-specific measured or modeled winter DO into the process (White et al. 2008; Leppi et al. 2015).

There is also concern that removing water from a lake in winter (including liquid water and ice aggregate) could affect post-winter lake outflow, as many Arctic fish migrate seasonally in order to reach suitable habitat, including lakes (Bond and Erickson 1985; Strange 1985; Morris 2003). Recent studies of lake-stream interactions (Arp et al. 2012) and fish habitat use (Heim 2014a, 2015) on the ACP in the region of the proposed action accentuate the importance of lake outlet connectivity and down-basin stream supply. Fish rely on habitat connectivity between lakes and streams to make seasonal upstream movements into lakes (Heim 2014b; Heim et al. 2017) and for the downstream transport of food items from lakes to stream-dwelling fish (McFarland 2015).

The initial influx of spring snowmelt water into lakes is known as “recharge”, which is effectively the replenishment of water removed during the winter. On the ACP, lakes pumped for winter exploration activities broadly appear to recharge in the spring (Baker 2002; Hinzman et al. 2006; Holland et al. 2008; Baker 2014). This includes some lakes where ice chips were utilized in addition to maximum permitted liquid water volumes (Baker 2007; BLM unpublished information 2016).

While observations to date provide evidence that spring/early summer lake outflow conditions are not being effected by winter water use, further studies are needed to better understand the relationship between winter use and the duration of summer downstream water supply. Water utilized during the winter does appear to be initially replenished, but the removal of water is nonetheless contributing to a local water balance deficit for which an impact may not be manifested until later in the summer. Fish not only need to access lakes during the spring runoff period, but also rely on stream-lake connectivity throughout the summer (Heim 2014a; Heim et al. 2017) and hydrology work on the ACP demonstrates the importance of lakes to annual down-basin streamflow (Arp et al 2012). For example, in the Crea Creek system (within the area of proposed action), two lakes support downstream flows. The upper-most lake (L9820) has an ephemeral outflow while the lower headwater lake (L9819) has more continuous outflow. Flow measurements at the lake outlets and downstream in 2014 showed that most stream water is being supplied from these lakes after snowmelt; the extent decreases later in the summer, although still accounting for >40% of the water ([Figure 7](#)).

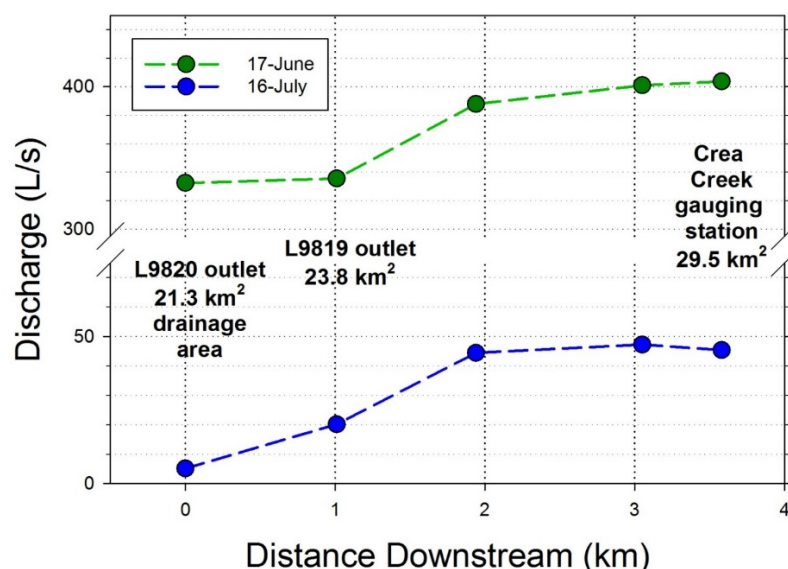


Figure 7. Discharge measurement data from the Crea Creek stream-lake system in 2014.

CPAI is requesting to use water from ten lakes where the targeted volume for using ice aggregate (only) does not fit precisely into a guideline category in BMP B-2. The circumstances leading to some of these being categorized as “deviation” lakes is primarily attributed to the BMP not clearly addressing specific volume allowances for all cases of only using ice aggregate (e.g. B-2a and B-2b). Nonetheless, the BLM has closely examined each of these lakes regarding a decision for water use. In each case, only ice aggregate would be utilized, significantly reducing the possibility for potential impacts to overwintering fish, so that the main concern relates to post-winter hydrology. Six of the deviation lakes (L9903, L9804, L9805, M0104, M0255, and M9925) provide habitat for resistant fish species only. The range of total volumes allowed for use from all other lakes with resistant fish only is 0.2% to 14% and the total volumes requested for five of the similar deviation lakes (all except M9925) fall within this range (Table 4.1). Three of the deviation lakes (L9813, M0420, and MM1707) provide habitat for sensitive fish species. The range of total volumes allowed for use from all other lakes with sensitive fish is 0.1% to 15% and the total volumes requested for all three of the similar deviation lakes fall within this range. One other deviation lake (M0705) does not have sufficient data to evaluate based on normal procedures, as the lake was determined too shallow to sample fish or collect bathymetry data (MJM Research 2007). For that lake, the volume of ice aggregate requested was calculated by multiplying the surface area by a depth of 1 foot.

Table 4.1. Percent of total lake volume requested for use as ice aggregate at lakes where the request deviates from BMP B-2.

Lake ID	Fish Classification	Percent of Lake Volume Requested as Ice Aggregate
L9803	resistant only	5
L9804	resistant only	7
L9805	resistant only	6
L9813	sensitive	4
M0420	sensitive	10
M0705	none	undetermined
M0104	resistant only	7
M0255	resistant only	9
M9925	resistant only	20
MM1707	sensitive	5

Where the total ice aggregate request at deviation lakes falls within the total volume allowances for other similar lakes (i.e. based on fish classification), it is reasonable to allow the requested water volume. However, if total water use at M9925 exceeds 14%, then follow-up monitoring of lake outlet conditions throughout the following summer is required (see section 4.4). Similarly, due to the lack of evaluation criteria, if M0705 is used for ice aggregate then post-winter observations

will be required (see section 4.4). Although this lake is too shallow to support fish and does not have an outlet (MJM Research 2007), it still provides an ecological function on the landscape (e.g. potentially for waterbirds) and the inability to compare a calculated volume to the requested volume voids a valid analysis. These decisions concur with those made by the State’s water permitting specialists at ADNR and ADF&G, as reflected in permitted volumes in FHPs and TWUAs, except for water use at M9925 and M0705, for which the BLM’s decision is more restrictive by requiring additional monitoring.

The BLM has also considered current water level conditions going into freeze-up for the 2017-18 winter. The summers of 2016 and 2017 were notably wet based on measured rainfall and this is reflected in stream gaging records (Table 4.2). Fall 2017 flows in Judy Creek and the Ublutoch River were approximately six times the average flow from the previous 15 years, indicating that water levels of all waterbodies in this region should be particularly high for the 2017-18 winter.

Table 4.2. Recent rainfall and streamflow data in the lower Fish Creek Watershed in the region of the proposed action.

Parameter	Average	2016	2017
Rainfall (inches): lower Fish Cr watershed (average based on 2003-2017)	3.13	5.32	5.53
Flow (cfs): Ublutoch River (average based on 2002-2016)	(Sept 1) 20.1	(Sept 1) 44.1	(Sept 1) 135
Flow (cfs): Judy Creek (average based on 2002-2016)	(Sept 1) 134	(Sept 1) 321	(Sept 1) 801

The BLM aims to manage water resources in the NPR-A within a framework of adaptive management, which can be generally characterized as “an approach for simultaneously managing and learning about natural resources” (Williams 2011) and is an appropriate strategy for management agencies working on complicated issues at a large scale (Johnson 1999). Some relevant aspects of adaptive management include:

- Recognizing uncertainties in ecological processes and effects of management actions
- Proceeding with management based on the best current information
- Allowing natural systems to react to stressors
- Monitoring resources and investigating results of management applications
- Shifting management strategies with improved knowledge

As an example, stipulations in the Environmental Assessment DOI-BLM-AKF01000-2016-005-EA required post-winter monitoring at three lakes (L9804, R0058, and M0016) where CPAI was permitted to utilize a greater combination of liquid water and ice chips than allowed by current guidelines in BMP B-2 during their 2015-16 winter exploration activities. During the melting period, observations by the BLM (unpublished photo records) confirmed initial spring recharge based on currently accepted criteria. While this provided further evidence that removed water is being replenished during snowmelt, the BLM continues to monitor lake and outlet water levels at two of those lakes in addition to two adjacent reference lakes.

While the BLM is actively studying these lakes and many others with regard to water balance, lake-stream interactions, and lake water use, definitive findings are not easily obtained given the complexities resulting from differences in drainage areas, lake morphology, outlet channel structure, position within a stream-lake network, and annual precipitation/evapotranspiration. Although uncertainties will continue to exist, based on numerous recharge observation efforts to date, investigations of winter DO conditions in previous studies, and concurrence with State regulatory specialists, there is ample evidence that water use at the levels requested in the proposed action will not result in a large-scale negative effect, and will be valuable in contributing to the incremental learning process that defines adaptive management.

The BLM continues to invest in multiple aspects of cooperative research and monitoring of lake systems on the ACP related to lake water use and potential advancements in aquatic resource management. Recent and ongoing work involving the BLM include annual monitoring (fishcreekwatershed.org); a new lake classification system for the Fish Creek Watershed (Jones and Zuck 2016; Jones et al. 2017); small-scale modeling to evaluate changes in water balance from lake water use (Gadeke et al. 2017); initial development of a lake-specific Winter Water Supply Index that could eventually incorporate physical, chemical, and biological inputs (Jones et al. 2017); and evaluation of a catchment-scale water management approach (Arp et al. 2017).

No-Action Alternative

Under the no-action alternative, CPAI would not drill any exploration wells, in which case there would be no need for water from lakes to construct ice roads and pads.

4.1.2 Issue 2: Subsistence

Proposed Action: The proposed activity as described above would result in temporary direct impacts to subsistence use areas (footprint of the activity), hunter avoidance of the areas, and localized deflection of subsistence resources from the areas. These impacts would require hunters to travel further to attempt to harvest resources, incurring greater expenses of time, fuel, wear on equipment, and greater risk of accidents. Some hunters may take advantage of ice roads and snow roads to travel, which could present a countervailing impact for those hunters. Many hunters would likely attempt to avoid the areas of activity entirely due to concerns over safety, their judgement that resources are less likely to be found near the activity, and general tendencies to avoid areas of industrial activity for subsistence. Overall impacts to the community's harvest of caribou may be more intense if inadequate numbers of caribou were harvested during summer and fall hunts, which is unknown at this time.

Large game (subsistence resources) could be deflected from areas of exploration activity. The activity occurs over a large area, all within Nuiqsut's subsistence use area. Hunters may avoid the area and may have to travel further and longer to harvest. Impacts to subsistence use from this project in and of itself are expected to be moderate and short term (reduced access and reduced availability of resources).

No-Action Alternative: Under the no action alternative, exploratory drilling at 5 locations under existing, valid oil and gas leases would not be allowed as proposed. No impacts to subsistence would result.

4.1.3 Issue 3: Sociocultural Systems

Proposed Action:

As shown in [Table 1.4](#), CPAI has had several meetings with agencies and the NSB on the proposed activity. On November 14, 2017, CPAI held a community meeting and open house in Nuiqsut. In addition to CPAI staff and the BLM, approximately 60 community members attended the open house including several Tribal Council Members from the Native Village of Nuiqsut. Many of the residents who attended the open house were interested in the type of activity as well as when and where the activity would occur. There were also specific concerns identified regarding caribou migration being pushed further to the west of Nuiqsut, the level of activity in and around hunting areas, hunters having to travel further to hunt and trap resulting in more income spent on fuel and the overall amount of oil and gas activity around the community.

In addition, to comments received during the public open house, NVN has standing concerns about these types of activities, which include direct interference with subsistence activities in traditional subsistence use areas, lack of consultation with industry, lack of capacity to respond or participate effectively, lack of control in the decision making process, and inadequate mitigation for subsistence and sociocultural impacts.

Other issues regularly cited as contributing to sociocultural impacts, include the pace of development (including permitting for exploration), the lack of capacity to respond or participate effectively in the permitting process, and the lack of power and control that the local community (as expressed by the Native Village of Nuiqsut) feels regarding decision-making on this application.

Sociocultural issues likely to result from the proposed activity include stress over the pace of exploration, tensions and conflict related to the permitting process and lack of capacity to respond at levels desired, distrust of agencies and industry, lack of local control over the activity, and cultural (and subsistence) concerns associated with the westward extent/location of the action in the Fish Creek area. The direct and indirect impacts of this project are expected to be minimally impacted.

No-Action Alternative: Under the no action alternative, exploratory drilling at 5 locations under existing, valid oil and gas leases would not be allowed as proposed. Anticipated impacts to sociocultural systems described above would not occur. Entities and individuals that support the exploration plan would be impacted negatively and local oil field services companies would not experience the positive economic benefits expected to result from the activity.

4.1.4 Issue 4: Environmental Justice

Proposed Action:

On November 14, 2017, CPAI held a community meeting and open house in Nuiqsut. In addition to CPAI staff and the BLM, approximately 60 community members attended the open house including several Tribal Council Members from the Native Village of Nuiqsut.

NVN maintains that the proposed activity will disproportionately affect community members who traditionally subsist in the areas proposed for winter exploration activities, that poorer community

members will be less able to adapt to needs to travel further to attempt harvests, and that the direct impact on a traditional subsistence use area constitutes a loss of traditional land.

Any adverse impacts to subsistence and sociocultural systems present environmental justice issues because they disproportionately affect a minority population. Impacts to subsistence uses from this project in and of itself are expected to be moderate and short term (reduced access and reduced availability of resources).

No-Action Alternative: Under the no action alternative, exploratory drilling at 5 locations under existing, valid oil and gas leases would not be allowed as proposed. Anticipated impacts to environmental justice would be reduced, although reduced opportunities for economic benefits would likely have negative economic impacts for some community entities and individuals.

4.2 Cumulative Effects

The BLM has evaluated the cumulative effects of past, present, and reasonably foreseeable winter activities in and around the NPR-A in a series of recent NEPA analyses. This EA tiers to the most recent cumulative impact analysis in the USDOJ BLM 2012 (Volume 4, Chapter 4 Section 4.8) and USDOJ BLM 2014 (Volume 4, Chapter 4.8). That analysis was based on a timeframe of approximately 1900 through 2100, and a geographic range incorporating the entire North Slope of Alaska and adjacent marine waters. Based on the requirements of 40 CFR 1508.7, and guidance in the Council on Environmental Quality handbook on cumulative effects (CEQ, 1997), this analysis of winter activity considers a narrower temporal and spatial framework (i.e. approximately 5 years past and future and influences limited to the distance of a radius of approximately 48 miles from the Nuiqsut which is the cumulative area used for CPAI's Winter Seismic EA.

Within that area the State of Alaska has the following projects possibly taking place on state lands this winter:

- Armstrong Pikka – on the west side of the Colville River, just north of Nuiqsut, departing from the Mustang Pad of Southern Miluveach Unit
- CPAI Alpine ice road – annual ice road from KRU DS 2L to Colville River Unit gravel road system
- CPAI Puttu – near Nuiqsut; constructing short spur off of the Alpine ice road system
- CPAI Bear 3D Seismic – early access from KRU DS 2P, later north access as a spur from the Alpine ice road system
- Accumulate exploration project – approximately 26 miles SW of Franklin Bluffs Pad, which is on the Dalton, 40 miles south of Deadhorse
- Hilcorp – Mine site E and Milne Mine Site expansions; Milne Point Unit development activity
- Glacier Oil/Savant – Exploration well from an existing pad within the Badami Unit
- ENI – drilling from existing Spy Island Drillsite to federal waters

Within the NPR-A this winter Olgoonik Construction Services has applied for a ROW to conduct the P&A of BLM Legacy Wells west of Umiat. The NSB is expected to hire a company to conduct overland hauling of fuel and materials from Deadhorse to Utqiagvik to Atqasuk. The NSB is also expected to apply for a ROW across BLM lands between NPR-A villages. Outside of

the NPR-A the CPAI Seismic Program that is taking place on state lands would encompass a small fraction of BLM Managed Land.

The causes and impacts of climate change are global in scope, with associated impacts evaluated in USDOJ BLM 2012. The primary influences in the current analysis include: oil and gas activities; subsistence use areas for the communities of Utqiagvik and Nuiqsut; and research/inventory, and recreation activity, as analyzed in USDOJ BLM 2012.

"Recent winter activities authorized by the BLM in the NPR-A have not caused significant direct or indirect adverse impacts to the environment. Significant adverse cumulative impacts to subsistence and sociocultural systems from oil exploration and development near the community of Nuiqsut, which can constitute environmental justice issues for that minority community, have been described in previous NEPA analyses (BLM 2014 § 4.6.10.8 and 4.6.10.2), and all applicable mitigation measures apply to the current proposed activity." There have been some minor, short-term, local adverse impacts as a direct result of activities associated with approved winter exploration programs. The small number and minimal severity of the impacts occurring from 1999 to 2017 demonstrates the overall effectiveness of the environmental protections that are applied to winter exploration activities in the NPR-A.

Results of previous analyses that have been incorporated by reference, and considerations of existing and proposed protective measures in the NPR-A, are key factors in limiting the cumulative impacts analysis to the issues listed below. Neither the Proposed Action nor the No-Action Alternative would add substantially to the incremental past, present, and future impacts described below with the exception of sociocultural tensions described above associated with lack of capacity to participate, lack of adequate consultation, and lack of local power in the decision-making process.

4.2.1 Issue 1: Fish and Water Resources

Because of protective measures, effects from refueling on lakes or building ice airstrips on lakes are expected to be minor, if occurring at all, and would not contribute to the cumulative effects of oil and gas exploration and development. Some effects from winter water use may occur at individual lakes associated with this exploration project. However, because these effects would most likely to be local (lake-specific) and short in duration, their accumulation is not expected to be reflected in regional scale hydrology or at the population level for fish.

4.2.2 Issue 2: Subsistence

Cumulative effects to subsistence uses in the area are described most recently in BLM 2014, § 4.6.10.8. Cumulative effects to subsistence have been previously analyzed, no new significance impacts are anticipated. ANILCA 810 Evaluation and Findings by BLM are required. Additional protection provided by: NPR-A BMPs A-1 – A-7, A-9, A-12, B-1, B-2, C-4, F-1, H-1, H-3, and I-1.

4.2.3 Issue 3: Sociocultural Systems

Cumulative effects to sociocultural systems in Nuiqsut are described most recently in BLM 2014, § 4.6.10.2. Cumulative effects to subsistence and sociocultural systems have been previously

analyzed, no new significance impacts are anticipated. Protection provided by NPR-A BMPs A-1 – A-7, A-9, B-1, B-2, F-1, H-1, H-3, and I-1.

4.2.4 Issue 4: Environmental Justice

Cumulative effects to environmental justice for the community of Nuiqsut are described most recently in BLM 2014, § 4.6.10.10.

4.3 Mitigation and Monitoring

In consultation with agencies and local residents, North Slope operators have actively worked to develop winter activity technologies that create minimal impacts to the environment and to local residents. Many of these enhancements, such as ways to reduce damage to tundra, have been incorporated into operational plans, including the proposed project.

The BLM will continue to monitor the following resources as the proposed action is implemented:

1. Access to subsistence use areas and displacement of subsistence resources
2. Cultural resources
3. Tundra/vegetation
4. Fish habitat
5. Lake recharge

The objective of this monitoring program is to ensure that all terms and conditions of the Federal ROW, the NPR-A ROD (USDOI BLM 2013) the NPRPA, and FLPMA (where applicable) are met.

4.4 Additional Mitigation and Monitoring

The BLM will incorporate the following additional mitigation measures into approvals for the CPAI Applications to Drill and ROW authorization. CPAI shall:

1. Provide the BLM Arctic District Office with a weekly activities summary report. This report shall include all required reports identified below. The report shall be delivered in digital format every Monday to dwixon@blm.gov and lbryant@blm.gov through the applicable season(s) for the life of this project.
2. The permittee will maintain an aircraft log of the following information for each take off and landing (which shall be turned in to BLM in electronic format in an excel spreadsheet with each item below listed in a separate column No Later Than **30 days after field activity is completed**):
 - Type of Aircraft
 - Aircraft N number
 - Date
 - Time
 - Decimal Degree Format – latitude of takeoff location
 - Decimal Degree Format – longitude of takeoff location
 - Date

Time

Decimal Degree Format – latitude of landing location

Decimal Degree Format – longitude of landing location

3. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds and humans. Such markings shall be developed through consultation with the BLM.
4. The permittee and designees will cooperate with the U.S. Fish and Wildlife Service (Service) and other Federal, State, or local agencies designated to represent the Service to monitor impacts of project activities on polar bears. For example, the permittee and designees will allow Service personnel access to the activity site upon request.
5. All field crews will follow a Wildlife Interaction Plan prepared by the permittee or a designee detailing how crews will manage wildlife attractants (food and non-food materials) and respond to human-polar bear interactions. This interaction plan must include all guidelines for safely and non-lethally deterring polar bears from damaging property and endangering the public as found in the Final Rule of the Marine Mammal Protection Act Deterrence Guidelines (attached). Other methods of deterring polar bears require authorization by the Service's Marine Mammals Management (MMM) office. Contact Christopher Putnam at 907-786-3844 for more information.
6. If a polar bear interaction escalates into a life-threatening situation, section 101(c) of the MMPA allows, without specific authorization, to take (including lethal take) a polar bear. Any injury or lethal take of a polar bear must be reported to the Service (907-786-3844) and BLM (907-474-2310) within 48 hours.
7. A polar bear den detection survey must be conducted each year prior to activities occurring in polar bear denning habitat during the maternal denning period (November to mid-April). All personnel must use caution when operating near polar bear denning habitat during the denning period.
8. The permittee or designee shall follow all terms and condition of Letters of Authorization (LOAs) issued by the Service for take of polar bears, and will provide the BLM with a copy of LOAs. In addition, the permittee or designee shall submit copies of following documents to the BLM at the time they are sent to the Service: 1) polar bear observation forms; and 2) an annual monitoring report, if required by the Service.
9. Provide the BLM with data collected at ice road or snow trail stream crossings regarding ice thickness or depth of liquid water during the pioneering stage of construction.
10. Provide the BLM with an as-built of all ice roads, snow trails, and ice pads shortly after the time the infrastructure is completed. Data should be in the form of ESRI shapefile(s) referencing the North American Datum of 1983 (NAD83).

11. Maintain a daily record of water removed as liquid or ice aggregate from each lake utilized as a water source and provide the BLM with this record weekly in conjunction with the progress report. A formatted spreadsheet provided by the BLM must be used for reporting.
12. Immediately cease pumping and notify the BLM within 48 hours if water removal exceeds the volume approved at any lake.
13. Notify the BLM within 48 hours of any observation of dead or injured fish on water source intake screens or in the hole being used for pumping (or observed frozen within any portion of ice roads, pads, or airstrips). Temporarily cease pumping from that hole until additional preventative measures are taken to avoid further impacts to fish.
14. Provide the BLM with photographs documenting all ice road or snow trail channel crossings that have been “removed, breached, or slotted” at the end of the winter operation period. The crossing name/identifier and geographic coordinates (latitude/longitude) must accompany each set of photos. (Note that per BMP C-3, this only includes crossings that have been reinforced with additional snow or ice).
15. Provide data from GPR and/or manually drilled holes demonstrating a comparison of ice thickness between ice airstrips and adjacent lake ice.
16. Monitor outlet conditions throughout the following summer at Lake M9925 if ice aggregate use exceeds 14% of total lake volume. Conduct post-winter observations at Lake M0705 (isolated with no outlet) if it is used for ice aggregate.

4.5 Summary of Environmental Consequences

This analysis has considered, tiered from, and incorporated by reference, previous studies and findings on activities on the North Slope and, specifically, in the NPR-A. The potential issues identified in the evaluation of the proposed action for this EA were: Fish and Water Resources, Subsistence, Sociocultural Systems, and Environmental Justice. The analysis found that impacts of this specific project would be moderate to major and localized and that the mitigation measures in [Appendix C](#), and project specific stipulations from [Section 4.4](#) would reduce adverse effects to Fish and Water Resources, Subsistence, Sociocultural Systems, and Environmental Justice to the greatest degree feasible. Likewise, the analysis also found that mitigation measures would reduce adverse effects to Fish and Water Resources, Subsistence, Sociocultural Systems, and Environmental Justice. These adverse impacts and their contributions to cumulative effects were identified and thoroughly analyzed in the SEIS ASDP (BLM 2014) and are mitigated to the greatest degree possible by measures established in the 2013 NPR-A IAP, and project-specific stipulations. This evaluation of the currently proposed action finds no new significant impacts.

Chapter 5 Consultation and Coordination

5. Agencies, Organization, Persons Consulted

Public notification of the Environmental Analysis will be on file at the Arctic District Office and available on the Arctic District Office Environmental Assessment web site.

5.1 List of Preparers

Table 5.1 List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document:
Robert Braumbaugh	Fluid Minerals Section Chief	Fracking
Lonnie Bryant	Realty Specialist	Lands and Realty
Melody Debenham	Physical Scientist	Air Quality, Waste (Hazardous/Solid)
Stacey Fritz	Anthropologist/Subsistence Specialist	Subsistence, connected ANILCA 810 evaluation
Nichelle Jones	Arctic Office Manager	Authorized Officer
Joe Keeney	Archeologist	Cultural and Paleontological Resources
Sarah LaMarr	Assistant Manager	Subsistence
Richard Kemnitz	Hydrologist	Water Resources, Floodplains/wetlands and Riparian Zones
Debbie Nigro	Wildlife Biologist	Mammals, Birds, T&E Species, Weeds and Vegetation.
Quinn Sawyer	Petroleum Engineering Technician	Fracking
Matthew Whitman	Fish Biologist	Fisheries
Donna Wixon	Natural Resource Specialist, Project Lead	Recreation, Wilderness Values, Visual Resource Management

ANILCA Requirements

Section 810 Subsistence Evaluation

This proposed action would not, in and of itself, significantly restrict subsistence uses. Previous NEPA reviews have described cumulative effects to subsistence that may significantly restrict subsistence uses. No new significant impacts have been identified. No reasonably foreseeable and significant decrease in the abundance of harvestable resources or in the distribution of harvestable resources, and no reasonably foreseeable limitations on harvester access will result from the proposed action.

Chapter 6 References

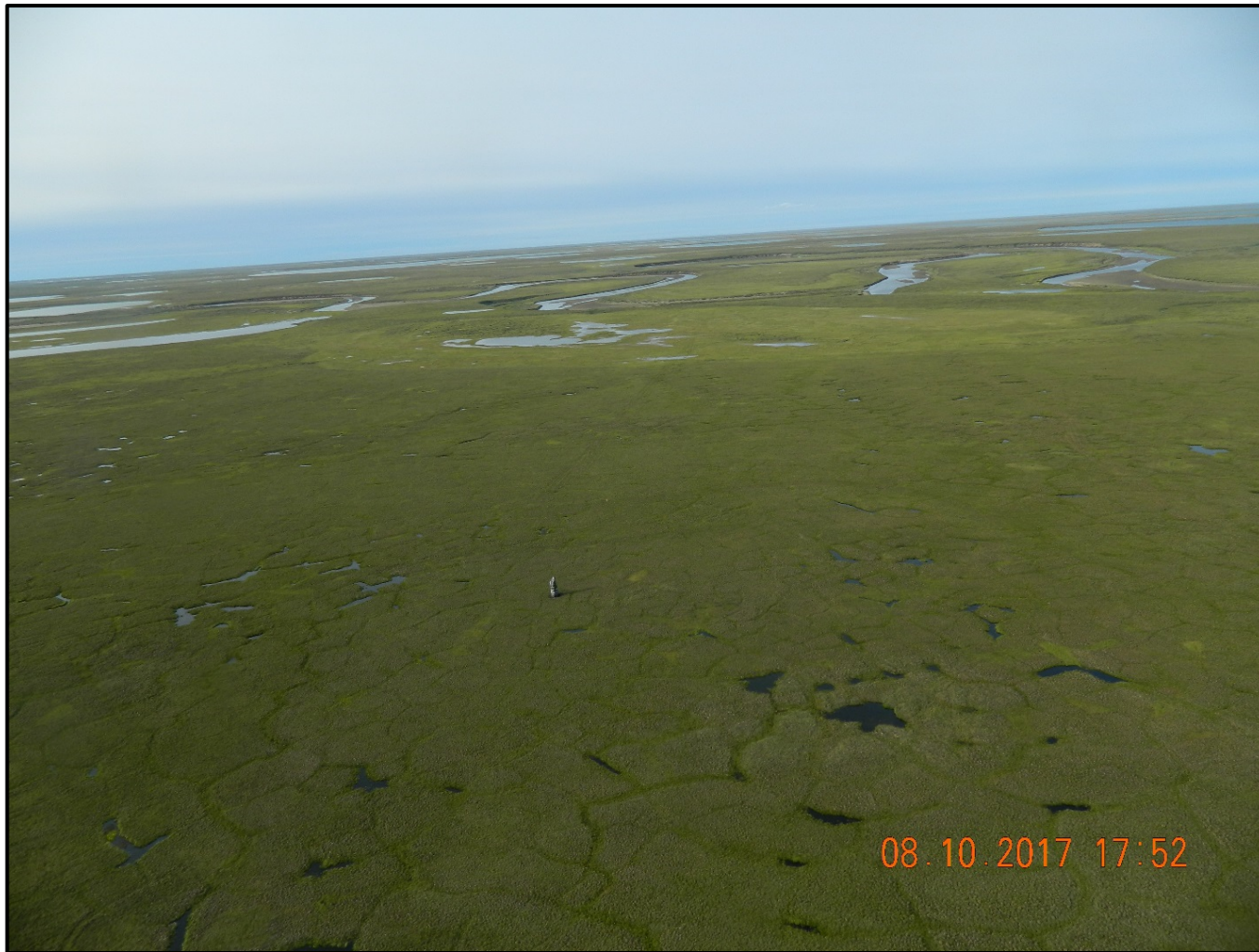
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APPENDIX A

Photographs of Proposed Work Sites 2017-2018



Photograph 1: Tiḡmiaq 6 Aerial View



Photograph 2: Proposed Stony Hill Drilling Location

Date & Time: Thu Aug 10 17:13:06 AKDT 2017

Position: +070°12.89' / -152°15.06'

Altitude: 95ft

Datum: WGS-84

Azimuth/Bearing: 274° N86W 4871mils (Magnetic)

Elevation Angle: -21.5°

Horizon Angle: -01.0°

Zoom: 1X



Photograph 3: Proposed Tinmiaq 7 Drilling Location



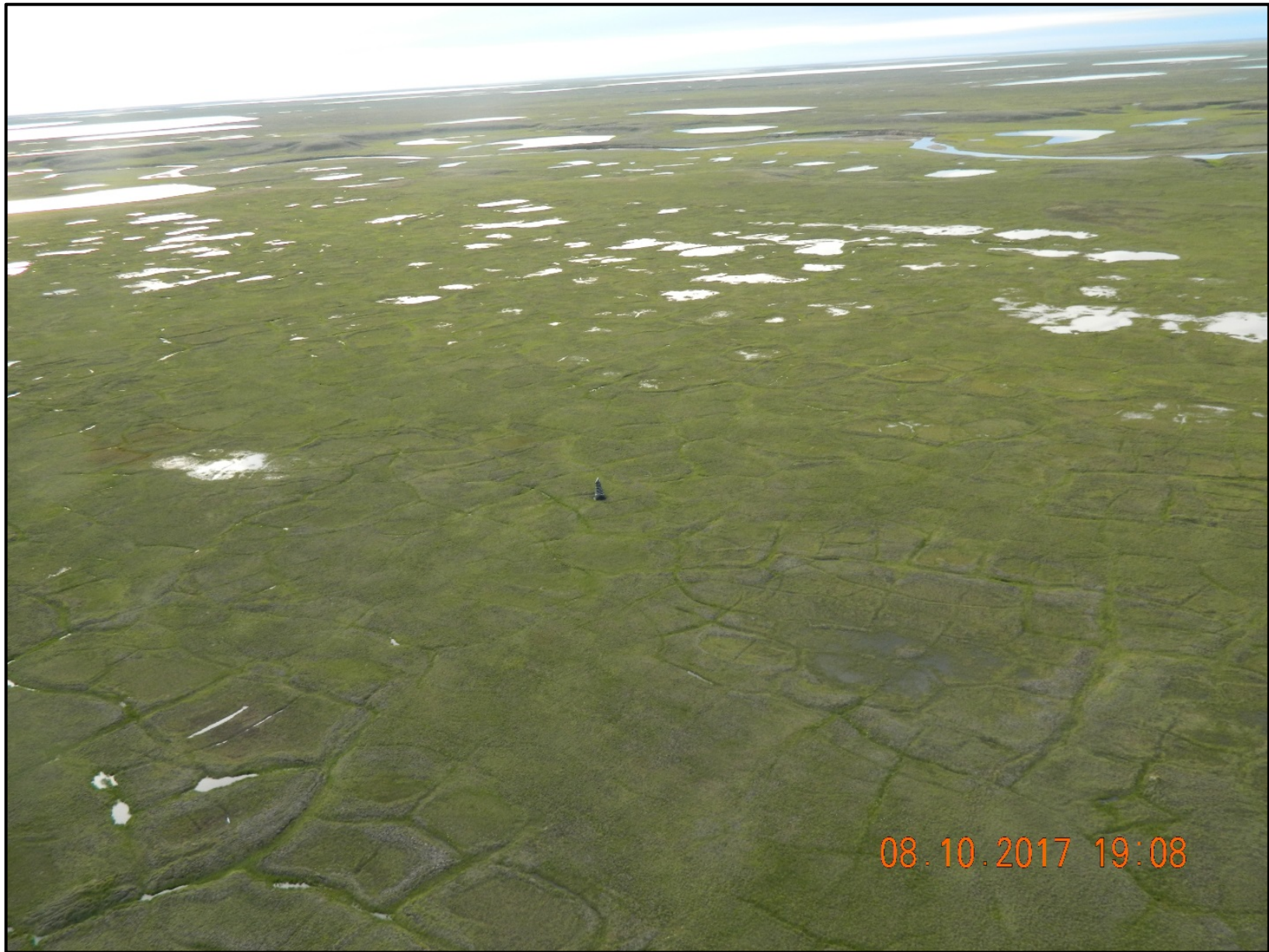
Photograph 4: Proposed Tinmiaq 8 Drilling Location



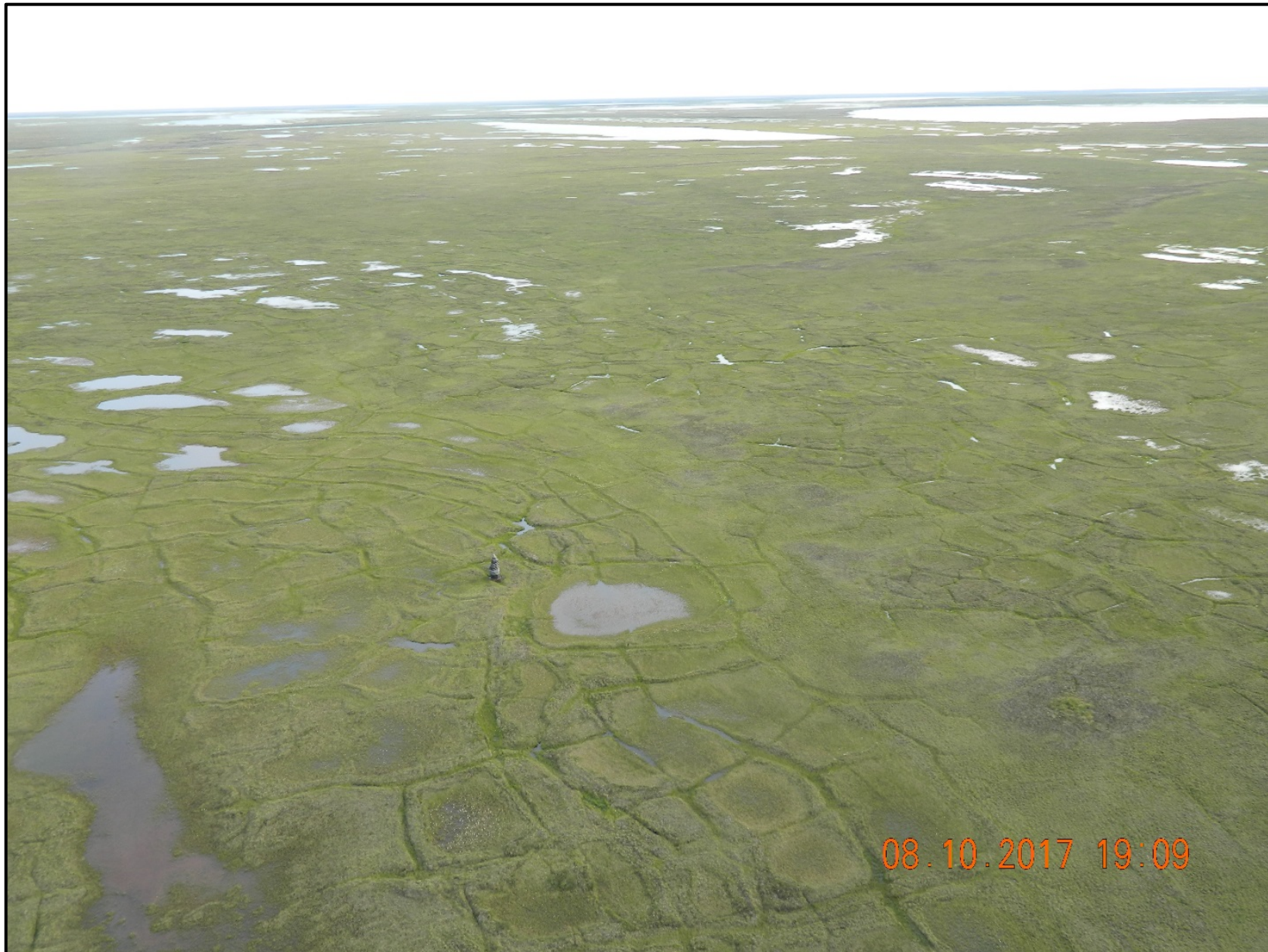
Photograph 5: Proposed Tinmiaq 9 Drilling Location



Photograph 6: Proposed West Willow 1 Drilling Location



Photograph 7: Proposed P&A Cassin 1 Site



Photograph 8: Proposed P&A Cassin 6 Site



Photograph 9: Proposed P&A Scout 1 Site

APPENDIX B

Legal Description (All Umiat Meridian)

Snow Trail to Tinmiaq

Township	Range	Land Managed by BLM	Land Not Managed by BLM
8 North	5 East	None	1-3, 9-11, 16, 17, 19, 20
8 North	4 East	None	24-28, 33
8 North	3 East	1-4, 10-15 Within the NPR-A, Excluding Private Land in Section 10	9, 10, 15, 16, 21-25
9 North	3East	19, 20, 28-34 Within the NPR-A Only	None
9 North	2 East	15-27, 30	None
9 North	1 East	13-25	None
9 North	1 West	1, 2, 12, 13, 24	None
10 North	1 West	9-11, 1416, 21-23, 26-28, 34-36	None

DS-2P Ice Road to Stony Hill

Township	Range	Land Managed by BLM	Land Not Managed by BLM	Notes
10 North	4 East	6, 7, 16-19, 30, 31	4, 5, 8, 20-29, 32	Lakes: L9803, L9804, L9805, L9806, L9811, L9812, L9813 M0420, M0702, M0703, M0704
9 North	4 East	3-10, 16-23, 27-33 Within NPR-A Only	None	M0705, MM0706, M0707, M0708, MM1731, MM1732

Ice Road to Tinmiaq et al Well Sites

Township	Range	BLM Managed Sections	Land Not Managed by BLM	Notes
11 North	3 East	20-23, 26-36	24, 25	None
10 North	3 East	6	None	Lake: M9925
10 North	2 East	4	1-3, 7-9, 16, 17	Lakes: M9925, M9913, M9912, M0254, M0255, M0256, M9914, M0022, M0023, R0071
10 North	1 East	2-14	None	Lakes: M9903, M9902, M9906, M9907, M0104
10 North	1 West	3-19	None	Tinmiaq 6, Tinmiaq 7 Lakes: N77099, M0104, M0235, MM1708, MM1709, MM1710, M0008/R0074, M0007/R0073
10 North	2 West	1-36	None	Lakes: MM1707, MM1706, MM1702, N77099, MM1704, MM1717, MM1718, MM1703, N77101, MM1716
9 North	2 West	1, 2, 11-14	None	Lakes: MM1710, MM1711, MM1712, MM1713, MM1714
9 North	1 West	5-8, 17, 18	None	Tinmiaq 8 Lakes: MM1710, MM1709, MM1711
11 North	1 West	1-36	None	Tinmiaq 9 Lakes: M0301, M0302, M0305, MM1703, MM1713, MM1714, M1201, M1203, M0244
12 North	1 West	13-36	None	Cassin 1, Cassin 6 Lake: M0701
11 North	2 West	25-36	None	West Willow 1 Lakes: M0307, MM1705, MM1703, MM1704, unnamed 1, unnamed 2
11 North	1 East	19, 20, 29, 30	None	Scout 1

APPENDIX C

NPR-A 2013 ROD Stipulations and Best Management Practices

Waste Prevention, Handling, Disposal, Spills, Air Quality, and Public Health and Safety

A-1 Best Management Practice

Objective: Protect the health and safety of oil and gas field workers and the general public by disposing of solid waste and garbage in accordance with applicable federal, State, and local law and regulations.

Requirement/Standard: Areas of operation shall be left clean of all debris.

A-2 Best Management Practice

Objective: Minimize impacts on the environment from non-hazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil field workers and the general public. Avoid human-caused changes in predator populations.

Requirement/Standard: Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the authorized officer for approval, in consultation with federal, State, and North Slope Borough regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application. Management decisions affecting waste generation shall be addressed in the following order of priority: 1) prevention and reduction, 2) recycling, 3) treatment, and 4) disposal. The plan shall consider and take into account the following requirements:

- a. Methods to avoid attracting wildlife to food and garbage. The plan shall identify precautions that are to be taken to avoid attracting wildlife to food and garbage
- b. Disposal of putrescible waste. Requirements prohibit the burial of garbage. Lessees and permitted users shall have a written procedure to ensure that the handling and disposal of putrescible waste will be accomplished in a manner that prevents the attraction of wildlife. All putrescible waste shall be incinerated, backhauled, or composted in a manner approved by the authorized officer. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with EPA and Alaska Department of Environmental Conservation regulations and procedures. The burial of human waste is prohibited except as authorized by the authorized officer.
- c. Disposal of pumpable waste products. Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection in accordance with EPA, Alaska Department of Environmental Conservation, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by Alaska Department of Environmental Conservation, will be allowed as necessary to facilitate annular injection and/or backhaul operations.
- d. Disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by a National Pollutant Discharge Elimination System or State permit.

A-3 Best Management Practice

Objective: Minimize pollution through effective hazardous-materials contingency planning.

Requirement/Standard: For oil- and gas-related activities, a hazardous materials emergency contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures in the plan applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures. In addition contingency plans related to facilities developed for oil production shall include requirements to:

- a. provide refresher spill-response training to North Slope Borough and local community spill-response teams on a yearly basis,
- b. plan and conduct a major spill-response field-deployment drill annually,
- c. prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve-Alaska operating area. Planning shall include development and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's/permittee's operating area and areas outside the lessee's/permittee's operating area that could be affected by their activities. (The specific area to be mapped shall be defined in the lease agreement and approved by the authorized officer in consultation with appropriate resource agencies.) Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the authorized officer in consultation with appropriate federal, State, and North Slope Borough resource and regulatory agencies.

A-4 Best Management Practice

Objective: Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes and marine waters, as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety. **Requirement/Standard:** Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and response contingency plan per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:

- a. **On-site Clean-up Materials.** Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.
- b. **Storage Containers.** Fuel and other petroleum products and other liquid chemicals

shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of water bodies, fuel containers are to be stored within appropriate containment.

- c. Liner Materials. Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.
- d. Permanent Fueling Stations. Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.
- e. Proper Identification of Containers. All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.
- f. Notice of Reportable Spills. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the authorized officer as soon as possible, but no later than 24 hours after occurrence.
- g. Identification of Oil Pans (“duck ponds”). All oil pans shall be marked with the responsible party's name.

A-5 Best Management Practice

Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment.

Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception that small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, are permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

A-6 Best Management Practice

Objective: Minimize the impact on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process.

Requirement/Standard: Surface discharge of reserve-pit fluids is prohibited.

A-7 Best Management Practice

Objective: Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.

Requirement/Standard: Discharge of produced water in upland areas and marine waters is prohibited.

A-8 Best Management Practice

Objective: Minimize conflicts resulting from interaction between humans and bears during oil and gas activities.

Requirement/Standard: Oil and gas lessees and their contractors and subcontractors will, as

a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:

- a. Minimize attraction of bears to the drill sites.
- b. Organize layout of buildings and work sites to minimize human/bear interactions.
- c. Warn personnel of bears near or on work sites and identify proper procedures to be followed.
- d. Establish procedures, if authorized, to discourage bears from approaching the work site.
- e. Provide contingencies in the event bears do not leave the site or cannot be discouraged by authorized personnel.
- f. Discuss proper storage and disposal of materials that may be toxic to bears.
- g. Provide a systematic record of bears on the work site and in the immediate area.

A-9 Best Management Practice

Objective: Reduce air quality impacts.

Requirement/Standard: All oil and gas operations (vehicles and equipment) that burn diesel fuels must use “ultra-low sulfur” diesel as defined by the Alaska Department of Environmental Conservation-Division of Air Quality.

A-12 Best Management Practice

Objective: To minimize negative health impacts associated with oil spills.

Requirement/Standard: If an oil spill with potential impacts to public health occurs, the BLM, in undertaking its oil spill responsibilities, will consider:

- a. Immediate health impacts and responses for affected communities and individuals.
- b. Long-term monitoring for contamination of subsistence food sources.
- c. Long-term monitoring of potential human health impacts.
- d. Perceptions of contamination and subsequent changes in consumption patterns.
- e. Health promotion activities and communication strategies to maintain the consumption of traditional food.

Water Use for Permitted Activities

B-1 Best Management Practice

Objective: Maintain populations of, and adequate habitat for, fish and invertebrates.

Requirement/Standard: Withdrawal of unfrozen water from rivers and streams during winter is prohibited. The removal of ice aggregate from grounded areas ≤ 4 -feet deep may be authorized from rivers on a site-specific basis.

B-2 Best Management Practice

Objective: Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish, invertebrates, and waterfowl.

Requirement/Standard: Withdrawal of unfrozen water from lakes and the removal of ice aggregate from grounded areas ≤ 4 -feet deep may be authorized on a site-specific basis depending on water volume and depth and the waterbody’s fish community. Current water use requirements are:

- a. Lakes with sensitive fish (i.e., any fish except ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 15% of calculated volume deeper

- than 7 feet; only ice aggregate may be removed from lakes that are ≤ 7 -feet deep.
- b. Lakes with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet; only ice aggregate may be removed from lakes that are ≤ 5 .
 - c. Lakes with no fish present, regardless of depth: water available for use is limited to 35% of total lake volume.
 - d. In lakes where unfrozen water and ice aggregate are both removed, the total use shall not exceed the respective 15%, 30%, or 35% volume calculations.
 - e. Additional modeling or monitoring may be required to assess water level and water quality conditions before, during, and after water use from any fish-bearing lake or lake of special concern.
 - f. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. Note: All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Fish and Game, Division of Habitat.
 - g. Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.

Winter Overland Moves and Seismic Work

The following best management practices apply to overland moves, seismic work, and any similar cross-country vehicle use of heavy equipment on non- roaded surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.

C-1 Best Management Practice

Objective: Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.

Requirement/Standard:

- a. Cross-country use of heavy equipment and seismic activities is prohibited within $\frac{1}{2}$ mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.
- b. Cross-country use of heavy equipment and seismic activity is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators near coastal areas shall conduct a survey for potential polar bear dens and seal birthing lairs and consult with the USFWS and/or NOAA-Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.

C-2 Best Management Practice

Objective: Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

Requirement/Standard:

- a. Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500

feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the authorized officer.

- b. Low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. Low-ground-pressure vehicles shall be selected and operated in a manner that eliminates direct impacts to the tundra by shearing, scraping, or excessively compacting the tundra mat. Note: This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.
- c. Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.
- d. To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.
- e. The location of ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.
- f. Motorized ground-vehicle use within the Colville River Special Area associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within an area that extends 1 mile west or northwest of the bluffs of the Colville River, and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and tributaries of the Kogosukruk River from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain 1/2 mile away from known raptor nesting sites, unless authorized by the authorized officer.

C-3 Best Management Practice

Objective: Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality, and protect stream banks.

Requirement/Standard: Crossing of waterway courses shall be made using a low-angle approach. Crossings that are reinforced with additional snow or ice (“bridges”) shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris.

C-4 Best Management Practice

Objective: Avoid additional freeze-down of deep-water pools harboring over-wintering fish and invertebrates used by fish.

Requirement/Standard: Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers, streams, and lakes shall be crossed at areas of grounded ice whenever possible.

Facility Design and Construction

E-9 Best Management Practice

Objective: Avoidance of human-caused increases in populations of predators of ground nesting birds.

Requirement/Standard:

- a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the authorized officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites.
- b. Feeding of wildlife is prohibited and will be subject to non-compliance regulations.

E-13 Best Management Practice

Objective: Protect cultural and paleontological resources.

Requirement/Standard: Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the authorized officer and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer.

Use of Aircraft for Permitted Activities

F-1 Best Management Practice

Objective: Minimize the effects of low-flying aircraft on wildlife, subsistence activities, and local communities.

Requirement/Standard: The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (Note: This best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.):

- a. Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within ½ mile of cliffs identified as raptor nesting sites from April 15 through August 15 and an altitude of at least 1,500 feet above ground level when within ½ mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.
- b. Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer. The BLM will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.
- c. Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Proposed aircraft use plans should be reviewed by appropriate federal, State, and borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the authorized officer if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to

support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered to allow larger aircraft to be employed, resulting in fewer flights to the facility.

- d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.
- e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area (Map 2) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area (Map 2) should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.
- f. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Utukok River Uplands Special Area (Map 1) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.
- g. Hazing of wildlife by aircraft is prohibited. Pursuit of running wildlife is hazing. If wildlife begins to run as an aircraft approaches, the aircraft is too close and must break away.
- h. Fixed wing aircraft used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 2,000 feet when within a ½-mile of walrus haulouts, unless doing so would endanger human life or violate safe flying practices. Helicopters used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 3,000 feet and a 1-mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices.
- i. Aircraft used as part of a BLM-authorized activity along the coast and shore fast ice zone shall maintain minimum altitude of 3,000 feet when within 1 mile from aggregations of seals, unless doing so would endanger human life or violate safe flying practices.

Subsistence Consultation for Permitted Activities

H-1 Best Management Practice

Objective: Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and other activities.

Requirement/Standard: Lessee/permittee shall consult directly with affected communities using the following guidelines:

- a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the North Slope Borough, and the National Petroleum Reserve-Alaska Subsistence Advisory Panel to discuss the siting, timing, and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes.

- b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to the National Petroleum Reserve-Alaska Subsistence Advisory Panel for review and comment. The applicant must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it.
- c. A plan shall be developed that shows how the activity, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan will also describe the methods used to monitor the effects of the activity on subsistence use. The plan shall be submitted to the BLM as part of the plan of operations. The plan should address the following items:
 - 1. A detailed description of the activity(ies) to take place (including the use of aircraft).
 - 2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the authorized officer during the consultation process.
 - 3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.
 - 4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.
 - 5. Procedures necessary to facilitate access by subsistence users to the permittees' area of activity or facilities during the course of conducting subsistence activities.
- d. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the authorized officer and NPR-A Subsistence Advisory Panel (SAP).
- e. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the NPR-A shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.
- f. Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts on the availability of marine mammals to subsistence hunters.
- g. All vessels over 50 ft. in length engaged in operations requiring a BLM permit must have an Automatic Identification System (AIS) transponder system on the vessel.

H-3 Best Management Practice

Objective: Minimize impacts to sport hunting and trapping species and to subsistence harvest of those animals.

Requirement/Standard: Hunting and trapping by lessee's/permittee's employees, agents,

and contractors are prohibited when persons are on “work status.” Work status is defined as the period during which an individual is under the control and supervision of an employer. Work status is terminated when the individual’s shift ends and he/she returns to a public airport or community (e.g., Fairbanks, Barrow, Nuiqsut, or Deadhorse). Use of lessee/permittee facilities, equipment, or transport for personal access or aid in hunting and trapping is prohibited.

Orientation Programs Associated with Permitted Activities

I-1 Best Management Practice

Objective: Minimize cultural and resource conflicts.

Requirement/Standard: All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, best management practices, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. The proposed orientation program shall be submitted to the authorized officer for review and approval and should:

- a. provide sufficient detail to notify personnel of applicable stipulations and best management practices as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.
- b. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.
- c. Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.
- d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.
- e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.
- f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.
- g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.
- h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.
- i. Include a module discussing bear interaction plans to minimize conflicts between bears and humans.
- j. Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to on-site personnel.
- k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the North Slope Borough Health Department for review and comment.
- l. Include training developed to train employees on how to prevent transmission of

communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the North Slope Borough Health Department for review and comment.

Endangered Species Act—Section 7 Consultation Process

J. The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or to have some other special status. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that will contribute to the need to list such a species or their habitat. The BLM may require modifications to or disapprove a proposed activity that is likely to adversely affect a proposed or listed endangered species, threatened species, or critical habitat. The BLM will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation.

General Wildlife and Habitat Protection

M-1 Best Management Practice

Objective: Minimize disturbance and hindrance of wildlife, or alteration of wildlife movements through the NPR-A.

Requirement/Standard: Chasing wildlife with ground vehicles is prohibited. Particular attention will be given to avoid disturbing caribou.

M-2 Best Management Practice

Objective: Prevent the introduction, or spread, of non-native, invasive plant species in the NPR-A.

Requirement/Standard: Certify that all equipment and vehicles (intended for use either off or on roads) are weed-free prior to transporting them into the NPR-A. Monitor annually along roads for non-native invasive species, and initiate effective weed control measures upon evidence of their introduction. Prior to operations in the NPR-A, submit a plan for the BLM's approval, detailing the methods for cleaning equipment and vehicles, monitoring for weeds and weed control.

NE IAP/EIS ROD (2008)

Stipulations and Required Operating Procedures

Oil and Gas Exploratory Drilling:

D-1 Lease Stipulation

Objectives: Protect fish-bearing rivers, streams, and lakes from blowouts and minimize alteration of riparian habitat.

Requirement/Standard: Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes.

D-2 Lease Stipulation

Objective: Minimize surface impacts from exploratory drilling.

Requirement/Standard: Construction of permanent or gravel oil and gas facilities shall be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.

Oil Field Abandonment:

G-1 Lease Stipulation

Objective: Ensure the final disposition of the land meets the current and future needs of the public.

Requirement/Standard: Upon abandonment or expiration of the lease, all oil and gas-related facilities shall be removed and sites rehabilitated to as near the original condition as practicable, subject to the review of the AO. The AO may determine that it is in the best interest of the public to retain some or all facilities. Within the Goose Molting Area, the AO, when determining if it is in the best interest of the public to retain a facility, will consider the impacts of retention to molting geese and goose molting habitat.

APPENDIX D

Oil and Gas Exploration Environmental Analysis Completed from 1998 – 2016

Environmental Analysis	Decision Document	Related Activity <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. August 1998.	Record of Decision, Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. BLM, October 1998	Multi-use management of the Northeast NPR-A, including oil and gas leasing, exploration and development
EA: AK-020-00-011. Environmental Assessment, 1999-2000 Winter Exploration Drilling Program in the National Petroleum Reserve-Alaska (NPR-A). USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. January 2000. [ARCO]	Finding of No Significant Impact and Decision Record AA-081794. Application for Permit to Drill and Right-of-Way. BLM. January 2000	Spark 1, Lookout A, Clover A, Clover B, Moose's Tooth A, Moose's Tooth C, Rendezvous A, and Rendezvous B. 30-mi ice road corridor; 20-mi packed snow trail corridor; 1 ice airstrip/yr; 137 MG water (23 lakes in NPR-A). 3-year program over 5 years
EA: AK-023-01-001. Environmental Assessment, Trailblazer Exploration Drilling Program, 2000-2005, National Petroleum Reserve-Alaska (NPR-A). USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2000 (minor revision January 2001). [BP Exploration (Alaska), Inc.]	Finding of No Significant Impact and Decision Record AA-081752. Application for Permit to Drill and Right-of-Way. BLM. January 2001	Trailblazer A–H. 34-mi ice road corridor; 18-mi packed snow trail corridor; 1 ice airstrip/yr; 525 MG water (52 lakes in NPR-A); 54-mi non-federal offshore ice road. 5-year program
EA: AK 023-01-003. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Exploration Program, Winter Drilling 2000-2006. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2000 (minor revision March 2001). [Phillips Alaska, Inc.]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. March 2001	Spark 2, Spark 3, Spark 4, Spark 5, Rendezvous 1, Rendezvous 2, Outlook 1, Oxbow 1, Hunter 1, and Sunrise 2. Up to 5 temporary camp/storage ice pads; 56-mi ice road corridor (+20 mi existing ROW); 0-mi packed snow trail corridor (+20 mi existing ROW); 1 ice airstrip/yr; 500 MG water (83 lakes in NPR-A). 5-year program
EA: AK-023-02-004. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Altamura Prospect Exploration Program. December 2001 (Minor revision January 2002). [Anadarko]	Finding of No Significant Impact and Decision Record AA-081736. Application for Permit to Drill. BLM. January 2002.	Altamura 1 and Altamura 2. 7-mi ice road corridor; 4-mi packed snow trail corridor (+15 mi existing ROW); 1 ice airstrip/yr; 19 MG water (9 lakes in NPR-A). 2-year program
EA: AK-023-02-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2001-2006 Exploration Drilling Program. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2001 (Minor revision January 2002). [Phillips Alaska, Inc.]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. January 2002.	Spark 6, Spark 7, Spark 8, Hunter A, Hunter 2, Lookout 2, Mitre 1, Rendezvous 3, Nova 1, Nova 2, Pioneer 1, Grandview 1, Tuvaq 1, Tuvaq 2, and Tuvaq 3. 30-mi ice road (+40 mi existing ROW); 100-mi packed snow trail (+31 mi existing ROW); 2 ice airstrip sites; 120 MG water (14 lakes in NPR-A). 5-year program
EA: AK-023-02-033. Environmental Assessment, Puviaq Storage Site Project, National Petroleum Reserve-Alaska. USDO I BLM, Northern Field Office, Arctic Management Team. March 2002. [CPAI]	Finding of No Significant Impact and Decision Record FF-093572. BLM NPR-A Permit 298401. March 28, 2002.	Access to and rig storage near Puviaq; 1 over-summer ice storage pad; 80-mi packed snow trail corridor. 1-year program

Environmental Analysis	Decision Document	Related Activity <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: AK-023-03-008. Environmental Assessment. National Petroleum Reserve-Alaska (NPR-A) Exploration Drilling Program, Puviaq #1 and #2 Exploration Wells. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2002. [CPAI]	Finding of No Significant Impact and Decision Record AA-081854. Application for Permit to Drill and Right-of-Way. BLM. December 2002.	Puviaq 1 and Puviaq 2. 76-mi ice road corridor; 168 mi packed snow trail corridor (+107 mi existing ROW); one over-summer ice storage pad, 2 ice airstrip sites; 124 MG water (28 lakes in the NPR-A). 2-year program
EA: AK-023-03-027. Environmental Assessment, Storage Ice Pads, USDO I BLM, Northern Field Office, Arctic Management Team. February 2003. [CPAI]	Finding of No Significant Impact and Decision Record FF-093905. Permit 298401. February 2003.	Alternate trail access to and rig storage near Kokoda/Carbon. 11-mi packed snow trail corridor; over-summer ice storage pad. 1-year program
EA: AK-023-03-032. Environmental Assessment, Access To and Drill Stacking at Inigok. USDO I BLM, Northern Field Office, Arctic Management Team. February 2003. [TOTAL E&P USA, Inc.]	Finding of No Significant Impact and Decision Record FF-093906. BLM NPR-A Permit 281001. February 2003.	Access to and rig storage at existing facility at Inigok; 30-mi packed snow trail corridor (+27 mi existing ROW). Access to lease; 6-mi hardened trail corridor. 1-year program
Northwest National Petroleum Reserve-Alaska Final Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. November 2003.	Record of Decision, Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/ Environmental Impact Statement. BLM. January 2004.	Multi-use management of the Northwest NPR-A, including oil and gas leasing, exploration and development
EA: AK-023-04-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling. USDO I BLM, Northern Field Office, Arctic Management Team. December 2003. [TOTAL E&P USA]	Finding of No Significant Impact and Decision Record AA-084161. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Caribou 07-16, Caribou 09-11, Caribou 14-12, Caribou 18-08, Caribou 23-14, Caribou 26-11, Caribou 35-05, and Caribou 35-14. One temporary staging ice pad; 60-mi ice road corridor (+22 mi existing ROW); 31-mi packed snow trail corridor (+ 27 mi existing ROW); corridor;170 MG water (35 lakes in NPR-A). 5-year program
EA: AK-023-04-004. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling Program, USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2003 (Minor revision December 2003). [CPAI]	Finding of No Significant Impact and Decision Record AA-084129. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Kokoda 1, Kokoda 2, Powerline 1, Grandview 2, Carbon 1, Summit 2, and Scout 1. 62-mi ice road corridor (+ 22 mi existing ROW); 5 ice airstrip sites; 92 MG water (12 lakes in NPR-A). 5-year program
Final Environmental Impact Statement. Alpine Satellite Development Plan. USDO I BLM, Alaska State Office, in cooperation with U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Coast Guard, and the State of Alaska Anchorage, Alaska. September 2004.	Record of Decision, Final Environmental Impact Statement, Alpine Satellite Development Plan. Prepared by BLM, October 2004.	Production Development
EA: AK-023-05-005. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2004 [CPAI]	Finding of No Significant Impact and Decision Record AA-081727. Application for Permit to Drill and Right-of-Way. BLM. December 2004.	Kokoda 3, Kokoda 4, Kokoda 5, Noatak 1, Bounty 1, Defiance 1; up to 10 temporary camp/storage ice pads; 26-mi ice road corridor (+84 mi existing ROW); 8-mi packed snow trail corridor (+88 mi existing ROW); 2 ice air strips/yr; 80 MG water (58 lakes in NPR-A). 5-year program
Final Northeast National Petroleum Reserve-Alaska Amended Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. January 2005 – remanded for further action	ROD – vacated by federal court	Multi-use management of the Northeast NPR-A, including oil and gas leasing, exploration and development

Environmental Analysis	Decision Document	Related Activity <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: AK-023-06-003. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Winter Exploration Drilling Program 2005-2007. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2005 [FEX]	Finding of No Significant Impact and Decision Record AA-085574. Application for Permit to Drill, 3100.00 and Right-of-Way, 2884.01. BLM. December 2005.	Aklaq 1, Aklaq 1A, Aklaq 2, Aklaq 2A, Aklaq 2B, Aklaqyaaq 1, Amaguq 1; 31-mi ice road corridor; 78-mi packed snow trail corridor (+399 mi existing ROW); 2 ice air strips/year; up to 4 temporary camp/storage ice pads, 85 MG water (28 lakes in NPR-A). 2-year program
EA: AK-023-07-001. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Winter Exploration Drilling Program 2006-2008. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2006 [FEX]	Finding of No Significant Impact and Decision Record AA-085574. Application for Permit to Drill, 3100.00 and Right-of-Way, 2884.01. BLM. December 2006.	Aklaq 3, Aklaq 4, Aklaq 5, Aklaq 6, Aklaq 7, Aklaq 7A, Aklaqyaaq 2, Amaguq 2; Uugaq 1; 62 -mi new access corridor, 2 ice air strips/year; 113 MG water (34 lakes in NPR-A). 2-year program
EA: AK-023-07-002. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2006-2011. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2006. [CPAI]	Finding of No Significant Impact and Decision Record AA-081840. Application for Permit to Drill, and ROWs, FF-092931 and FF-093835. BLM. December 2006.	Noatak-2, Noatak-3, Nugget-1, Nugget-2, Cassin-1, Cassin-2, Cassin-3, Spark DD 9-12; 110-mi new access corridor; 3 ice air strips/year; 201.5 MG water (9 new lakes in NPR-A). 5-year program
EA: AK-023-07-006. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Petro-Canada (Alaska), Inc. Winter Exploration Drilling Program 2007-2009. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. April 2007. [PCA]	Finding of No Significant Impact and Decision Record AA-085497. Application for Permit to Drill, and ROWs, FF-095123. BLM. April 2007.	Alaqtqaq2 1, Tupaagruk 1, Tupaagruk 2, Tupaagruk 3. 43 miles of new access corridor; 2 ice airstrips/year; 58.8 MG water (22 new lakes in NPR-A). 2-year program
EA: AK-023-08-002. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2007-2009. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. [Renaissance Umiat]	Finding of No Significant Impact and Decision Record AA081726 & AA084141. Application for Permit to drill, and ROW FF095270. BLM. December 2007	Wells 12, 13, 14, 15, 16, 17, 18, 19, 21, and 22. 7 miles of ROW in NPR-A. 38 miles of access route on fed lands outside NPR-A. 120 MG water (13 new lakes in NPR-A). 2 yr program.
EA: AK-023-2008-007. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2007-2012. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. [CPAI]	Finding of No Significant Impact and Decision Record AA081775, AA081781 & AA081800. Application for Permit to drill, and ROW FF092931. BLM. December 2007	Rendezvous 2, Spark Down Dip 9, Stony Hill. 110 miles of access corridor. 201.5 MG water (17 lakes). 3 ice airstrips. 5 Yr program.
Northeast National Petroleum Reserve – Alaska Final Supplemental Integrated Activity Plan/Environmental Impact Statement. USDO BLM. May 2008.	Record of Decision, Northeast National Petroleum Reserve – Alaska Final Supplemental Integrated Activity Plan/Environmental Impact Statement. BLM. July 2008.	Northeast NPR-A Oil & Gas Leasing, exploration and development.

Environmental Analysis	Decision Document	Related Activity <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: DOI-BLM-LLAKF01000-2009-001. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast & Northwest Planning Area, Winter Exploration Drilling Program 2008-2012. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office.[Anadarko]	Finding of No Significant Impact and Decision Record AA086604, AA086615, AA086616 & AA086617 Application for Permit to drill, and ROW FF095310. BLM. November 2008.	Wolf Creek #4, Wolf Creek #5, Wolf Creek #6, Tsavorite #1A, Tsavorite #1B,, Tsavorite #1C., Tsavorite #1D., Tsavorite #1E, 66 Miles of snow trail, 35 miles in field ice road, 2 ice air strips, 23 lakes in NPR-A.390 MG water.
EA: DOI-BLM-LLAK01000-2009-0004. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2008-2013. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office.[CPAI]	Finding of No Significant Impact and Decision Record AA081785 & AA081779. Application for Permit to drill, and ROW FF092931. BLM. December 2008	Grandview #1 East, Pioneer #1. 27 Miles of new ROW. 26 new lakes. 52.45 MG water
DNA: DOI-BLM-LLAK010-2010-0004. Documentation of Land Use Plan Conformance and NEPA Adequacy, Northeast Planning Area, Winter Exploration Drilling Program Extension. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office. [Renaissance Umiat]	AA081726 & AA084141. Application for Permit to drill extension, and ROW FF095270. BLM. February 9, 2010.	Wells 12, 13, 14, 15, 16, 17, 18, 19, 21, and 22. 7 miles of ROW in NPR-A. 38 miles of access route on fed lands outside NPR-A.. 120MG 120 MG water (13 new lakes in NPR-A). 2 yr program
EA: DOI-BLM-LLAK010-2011-0001. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast and Northwest Planning Areas, Well Abandonment Program 2011. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office.[FEX]	Finding of No Significant Impact and Decision Record AA085494 & AA085503, AA085517. Application for Permit to drill, and ROW FF095743 and Injection Well FF095766 BLM. January 2011.	Aklaqyaaq #1, Aklaq #2, Aklaq #6. ROW 145.32 miles. 20,000 gallons water.
EA: DOI-BLM-LLAK010-2011-0005. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Well Plugging Program 2011. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office.[CPAI]	Finding of No Significant Impact and Decision Record AA081854. Application for Permit to drill, and ROW FF095631. BLM. February 2011.	Puviaq #1. 98.2 miles of ROW.20,000 gallons water.
National Petroleum Reserve –Alaska Final Integrated Activity Plan/Environmental Impact Statement. USDO BLM. November 2012.	Record of Decision, National Petroleum Reserve –Alaska Final Integrated Activity Plan/Environmental Impact Statement. BLM. February 2013.	NPR-A Oil & Gas Leasing, exploration and development.
EA: DOI-BLM-LLAK010-2013-0001. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, 1 Yr Winter Exploration Drilling Program 2012-2013. USDO BLM, Alaska, Fairbanks District Office, Arctic Field Office.[CPAI]	Finding of No Significant Impact and Decision Record AA081832, AA081833 & AA091675. Application for Permit to drill, and ROW FF096502. BLM. December 2012.	New Wells Cassin #1, Cassin #6. P&A Carbon 1, Moose’s Tooth C, & Scout 1. 88 Miles of ROW. 21 lakes.52.45 MG water

Environmental Analysis	Decision Document	Related Activity <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: DOI-BLM-LLAK010-2013-0002. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, 1 Yr Winter Delineation Drilling Program 2013. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. [Linc]	Finding of No Significant Impact and Decision Record AA081726 & AA084141. Application for Permit to drill. BLM. January 2013.	New Wells Umiat Well DSP-01, Umiat Well 16, Umiat Well 16H, Umiat Well 18, Umiat Well 19, Umiat Well 23, Umiat Well 23H. 7 Miles of access route on-lease. 5 lakes. 32.16 MG water (with 10% Contingency)
EA: DOI-BLM-AK-F010-2014-0001. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, 1 Yr Winter Exploration Drilling Program 2013-2014. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. [CPAI]	Finding of No Significant Impact and Decision Record AA081784, AA087896, AA087852. Application for Permit to drill and ROW FF096701. BLM December 2013	New Wells Rendezvous # 3 & Flat Top #1. 53 Miles of ROW. 21 lakes. 65.21 MG water
EA:DOI-BLM-AKF010-2014-0002 Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, 1 Yr Winter Delineation Drilling Program 2014. USDO I BLM Alaska Fairbanks District Office, Arctic Field Office [Linc]	Finding of No Significant Impact and Decision Record AA08126 & AA084141. Application for Permit to drill. BLM December 2013	New Wells Umiat Well 24, Umiat Well 25 & Umiat Well 23H. 8 Miles of access route on-lease. 5 lakes. 50.97 water (10% Contingency)
DNA: DOI-BLM-LLAK010-2014-0006. Documentation of Land Use Plan Conformance and NEPA Adequacy, Northeast Planning Area, Winter Exploration Drilling Program Extension. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. [CPAI]	AA081784, AA087896, AA087852. Application for Permit to drill and ROW FF096701. BLM December 2013	Wells Rendezvous # 3 & Flat Top #1. 16 more miles of ROW
EA: DOI-BLM-AK-01000-2016-005. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, 1 Yr Winter Exploration Drilling Program 2015-2016. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office [CPAI]	Finding of No Significant Impact and Decision Record AA081787, AA081807, AA090707, AA093932 & FF97071 Application for Permit to drill and ROW BLM December 2015	New Wells Tinmiaq #1, Tinmiaq #2, Tinmiaq #3, Tinmiaq #4, Tinmiaq #5, Tinmiaq #6. 97 miles of ROW. 24 lakes. 67.60 MG water

Appendix E

Response to public comments

Joint Comments were received from Alaska Wilderness League, Center for Biological Diversity, Conservation Lands Foundation, Earthjustice, Northern Alaska Environmental Center, Sierra Club and The Wilderness Society. The table below are the responses to the comments.

#	Comment	Response
1	Public comment on this large-scale exploration drilling program is hampered by the lack of any draft alternatives or impact assessment from BLM. Commenters urge the agency to provide an opportunity for comment after it completes its draft environmental review.	The BLM Arctic District Office followed our procedure of posting public notice when conducting an Environmental Assessment (EA) for an Exploration Oil and Gas (O&G) proposal. With the creation and evolution of e-planning, the project description was posted online on October 11, and initiated the preparation of the EA. The completed Proposed Action, Chapter 2 of the EA, was posted on October 18 and contained a detailed description of the proposed activity by the applicant for the upcoming winter operational season. It is our policy to notice the action and accept public comment for 30 days prior to finalizing the EA. The BLM NEPA Handbook (H-1790-1) Section 8.2 states “The CEQ regulations do not require agencies to make EAs available for public comment and review.” We believe our process has provided a meaningful opportunity for public comments.
2	In conducting its review, the agency must consider potential environmental impacts associated with its proposed action, including direct, indirect, and cumulative impacts	See Chapter 4 Environmental Impacts for analysis of direct, indirect and cumulative impacts.
3	BLM must consider impacts that CPAI’s unprecedented proposed water withdrawals could have on tundra lake hydrology and the resident aquatic life in source lakes.	See 4.1.1 Issue 1: Fish & Water Resources
4	BLM must consider impacts that CPAI’s unprecedented proposed water withdrawals could have on wildlife species in the community	See Table 1.3 sections: Threatened & Endangered Species Steller’s eider, Threatened & Endangered Species Spectacled eider, Non threatened and endangered birds

#	Comment	Response
	of Nuiqsut’s subsistence use areas, and impacts on subsistence use itself.	
5	BLM must also consider potential impacts from hydraulic fracturing activities.	See comment response #40
6	BLM must consider a range of reasonable alternatives to the proposed action, including alternatives allowing only a subset of CPAI’s proposed activities during the 2017-18 season.	<p>BLM considered a range of alternatives (Section 2.3) including a subset of CPAI’s proposed activities; however, none of them met the purpose and need (Section 1.1 and 1.2). The BLM NEPA handbook under Section 8.3.4.2 Alternatives in an EA, states: “EAs shall “include brief discussions ...of alternatives as required by section 102(2)(E)...” (40 CFR §1508.9(b)). Section 102(2)(E) of the NEPA provides that agencies of the Federal Government shall “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” After completing the analysis of the alternatives, the Arctic District Office did not find unresolved conflicts concerning alternative uses of available resources.</p> <p>“Therefore, at a minimum your EA must include documentation of the current and future state of the environment in the absence of the proposed action. This discussion does not need to be a separate section called “No Action Alternative,” but can be part of the environmental effects section of the EA to show the change in effects brought about by the proposed action or alternatives.” The Arctic District Office chose to include the No-Action as an alternative (Section 2.3.2).</p>
7	BLM must consider whether the proposed action would significantly restrict subsistence uses, and, if so, only proceed if the agency follows required procedures and can make the findings required under section 810 of the Alaska National Interest Lands Conservation Act (ANILCA).	<p>A Section 810 Evaluation is required for any action to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands in Alaska under any provision of law authorizing such actions. This applies whether the action is a request from outside the agency or initiated by the agency. Conducting ANILCA 810 evaluations in Alaska on public lands is mandatory for virtually all Federal land use decisions. An ANILCA 810 Evaluation was completed for the winter exploratory drilling project and found that the direct and indirect effects of the proposed action would not</p>

#	Comment	Response
		<p>significantly restrict subsistence uses. ANILCA 810 evaluations for the cumulative scenario in recent EISs (i.e., 2013 NPR-A IAP) and for the direct and indirect effects of the GMT1 development project (BLM 2014) found that these activities may significantly restrict subsistence uses. Therefore, BLM undertook the notice and hearing procedures required by ANILCA § 810 (a)(1) and (2) in conjunction with releases of those Draft EISs and determined that the significant restrictions that may occur are necessary, consistent with sound management principles for the use of these public lands, and for BLM to fulfill the management goals of the NPR-A as directed by the 2013 NPR-A IAP/EIS, the Naval Petroleum Reserves Production Act, Federal Land Policy and Management Act, and other applicable laws. No new significant restrictions to subsistence are expected to result from the proposed activity.</p>
8	<p>BLM's Public Comment Process on the Proposed Action and Its Environmental Impacts Has Been Deficient. When preparing an environmental analysis, BLM "must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to weigh in with their views and thus inform the agency decision-making process.</p>	<p>This EA tiers to the NPR-A Integrated Activity Plan/Environmental Impact Statement, which contains an extensive analysis of the impacts associated with O&G exploration activities such as those currently proposed by the applicant. Through this analysis, the BLM implemented a robust package of required Best Management Practices that all applicants must abide by in order to minimize or avoid the identified impacts. CEQ regulations do not require agencies to make EAs available for public comment and review, we believe we have provided a meaningful opportunity for public comment. The proposed action was posted on-line for more than 30 days to allow the public time to provide any comments on the proposal. The Arctic District Office staff along with BLM State Office staff reviewed all the comments received and have responded to each of the comments. See Appendix E</p>
9	<p>On October 18, 2017, the agency posted a 38-page document on its website describing its proposed approval of CPAI's 2017-18 winter exploration activities. The document is entitled</p>	<p>The document should have been saved as Chapter 2 Proposed Action, naming with the Alternatives was a copy and paste error. At the time of the posting of the proposed action on-line, the Arctic District Office Staff was working on the EA. Staff used the 30-day posting time to</p>

#	Comment	Response
	<p>“Chapter 2 Proposed Action and Alternatives.” Notwithstanding its title, the document describes only the proposed action, Alternative A. The document discusses no alternatives to approval, nor does it include discussion of potential environmental impacts flowing from approval or alternative agency actions.</p>	<p>review and analyze the proposed action and develop mitigation measures needed to address impacts.</p>
10	<p>Without any BLM analysis of alternatives or impacts to review, public comment on the proposal is substantially hindered, making it difficult for members of the public to weigh in on the proposal and inform the agency decision-making process. <u>BLM should reopen the public comment process on this proposal after making available a full draft environmental analysis that defines alternatives to the proposed action and fully describes the potential environmental impacts associated with each of them.</u></p>	<p>We appreciate the comments that were submitted via e-mail and at community meetings and considered each of them before finalizing the EA. The BLM does not plan to reopen the public comment process on this proposal; however, we are always willing to hear any comments that the public may have on a project.</p>
11	<p>BLM Must Consider the Environmental Impacts of the Proposed Action and Prepare an Environmental Impact Statement If These Impacts Are Potentially Significant.</p>	<p>BLM considered the Environmental Impacts of the Proposed Action and found no new significant impacts (Since USDO I BLM 2014 AND 2015). See FONNSI.</p>
12	<p>BLM should consider the site specific impacts that could flow from the proposed action’s water withdrawals.</p>	<p>See 4.1.1 Issue 1: Fish & Water Resources</p>
13	<p>BLM should consider the site specific impacts that could flow from the proposed action on the potential displacement of wildlife, and, in particular subsistence use of caribou or other species.</p>	<p>Table 1.3 section: Non threatened and endangered mammals. See Section 4.1.2 Issue 2: Subsistence.</p>
14	<p>If there are substantial uncertainties about the impacts of the proposed action resulting from the</p>	<p>BLM considered the Environmental Impacts of the Proposed Action and found no new significant impacts (Since USDO I BLM 2014 AND</p>

#	Comment	Response
	significant size of the action or from missing information, such that BLM’s analysis cannot exclude the possibility of significant environmental impacts, BLM must prepare an EIS.	2015). See FONNSI. The size of the action is not significant but normal size compared to other years of similar exploration activity within the NPR-A. There are many examples of winter operational seasons where there were multiple wells proposed within the NPR-A (See Appendix D).
15	BLM must Consider the Potential Impacts of Proposed Water Withdrawals.	See 4.1.1 Issue 1: Fish & Water Resources
16	BLM must consider impacts on fish populations in source lakes arising from the proposed action’s water withdrawals.	See 4.1.1 Issue 1: Fish & Water Resources
17	The agency’s approval of the program poses site-specific and project specific impacts qualitatively different than those of previous exploration programs and not considered in previous agency analyses.	Each well location would have its own site-specific information while having similarities with locations that have been permitted in the past. The differences are the reason that BLM analyzes the proposed action with an EA that tiers to our overarching EIS analysis, in order to determine if there are significant impacts at the site-specific-level. CPAI is proposing a large water withdrawal this year; however, the amount would be spread out over multiple lakes and it is not the largest amount they have requested over the years. The EA analyzes the site specific impacts of the proposed action. See Sections 4.1.1 and 4.2.1. for the analysis of water withdrawals.
18	Water Withdrawals Can Have Significant Impacts to overwintering fish.	See 4.1.1 Issue 1: Fish & Water Resources
19	BLM Must Consider Up-to-Date Data Regarding the Full Effects of Water Withdrawals.	See 4.1.1 Issue 1: Fish & Water Resources
20	It is crucial that BLM disclose and analyze data on lake recharge following previous water withdrawals on the NPR-A, as well as disclosing what data do not yet exist and what aspects of lake-ecosystem recharge and resilience remain uncertain. In the course of the agency’s analysis of existing and absent data, BLM should also focus on whether available data indicate a 100	Lake observations and snow survey modeling to date provide support that lake water removed in the winter is replenished in the spring (“recharge”). However, 100% recharge cannot be confirmed. The BLM continues to examine this topic as well as potential hydrology impacts that may not be manifested until later in the summer (i.e. effects on the duration of lake outflow). The BLM is basing its current management decisions on the best available information. See 4.1.1 Issue 1: Fish & Water Resources for further information.

#	Comment	Response
	percent recharge in lakes that have been subjected to withdrawal.	
21	BLM should also consider how recharge bears on connectivity between overwintering habitat and other waterbodies, and how the timing of recharge corresponds to or affects access of fish to other feeding and spawning habitat.	See 4.1.1 Issue 1: Fish & Water Resources
22	Along with recharge data, BLM should make sure that its bathymetry and lake-volume information is up to date. BLM should consider whether water withdrawals, as defined in absolute terms, in fact correspond to the percentages of total lake volume contemplated in the best management practices. The agency must look at site-specific estimates and data for specific source lakes, because “[d]ifferences in specific lake characteristics, such as basin shape, substrate, oxygen concentrations, and species composition, can change the impacts of winter water withdrawal.”	The BLM is utilizing the most current bathymetry and lake-volume information, in concurrence with the State water permitting agencies ADNR and ADF&G, which replaced the previously used cone method. Similarly, the BLM is in concurrence with those agencies regarding the view that current guidelines for liquid water allowances are broadly protective of fish and water resources. There will always be some level of uncertainty in attempting to understand natural systems, but information to date supports current decisions regarding levels of liquid water volumes allowed.
23	In considering the accuracy of bathymetric surveys, the agency should consider what methods were used for the updated bathymetric surveys; surveys conducted by remote sensing should be compared against data from manual surveys, to ensure accuracy. If the agency lacks data regarding the current accuracy of its bathymetric surveys, it should identify this uncertainty.	The BLM is utilizing the most current bathymetry and lake-volume information, in concurrence with the State water permitting agencies ADNR and ADF&G, which replaced the previously used cone method. There is not yet a broadly acceptable, accurate remote sensing technique for lake bathymetry.
24	The agency should also consider whether its estimates of ice thickness are up to date, and disclose the basis of these estimates. If it lacks	The BLM considers all relevant and recent information regarding ice thickness. For example, on-the-ground efforts such as CALON

#	Comment	Response
	data, it should identify these gaps and describe what uncertainty results.	(http://www.arcticlakes.org) published data sets and journal articles, and remote sensing efforts (Jones et al. 2017).
25	Apart from lake-volume data, the agency should also consider data (or a lack thereof) on source-lake water temperature and data on the relationship of water temperature and changes in dissolved oxygen levels.	The BLM is in concurrence with State water permitting agencies ADF&G and ADNR regarding the view that current guidelines for liquid water allowances are broadly protective of fish and water resources (e.g. with regard to dissolved oxygen). As such, winter water quality information is only collected if there are unique concerns related to withdrawals and studies are mandated. See Section 4.1.1 for a discussion regarding dissolved oxygen and water use. There will always be some level of uncertainty in attempting to understand natural systems, but information to date supports current decisions regarding levels of liquid water volumes that are allowed.
26	The agency should state whether climate change dynamics bear on these factors, or introduce uncertainty about them.	The BLM is involved in ongoing work that is evaluating freshwater systems on the ACP in the context of oil and gas land use and future climate uncertainty (Arp et al. 2017). Thus far, climate change dynamics have not demonstrated any long-term trends in water availability. 2016 and 2017 experienced substantial increases in water availability due to late summer rainfall. These followed a dry summer in 2015 which did not meet average rainfall.
27	An accurate volume baseline for each source lake and understanding of the changes in a relevant oxygen budget are necessary to avoid understating the severity or extent of impacts on overwintering habitat and oxygen budgets.	The BLM is utilizing the most current bathymetry and lake-volume information, in concurrence with the State water permitting agencies ADNR and ADF&G. Similarly, the BLM is in concurrence with those agencies regarding the view that current guidelines for liquid water allowances are broadly protective of fish and water resources (e.g. with regard to DO). There will always be some level of uncertainty in attempting to understand natural systems, but information to date supports current decisions regarding levels of liquid water volumes that are allowed.
28	At several points along CPAI's proposed ice road network, clusters of closely situated waterbodies have been identified as source lakes. In its analysis of potential environmental	Lakes being used for winter ice infrastructure are commonly clustered. The BLM acknowledges uncertainties in evaluating and understanding stream-lake connectivity on the ACP and has been actively working on the issue for years, and continues to monitor and support research that

#	Comment	Response
	impacts, BLM should consider source lakes' hydrological connections, including via groundwater, stream connections, or connections via shared sources of seasonal recharge. Where there are connections, the agency should consider whether impacts of withdrawals from connected lakes are simply additive, or whether simultaneous withdrawals from a network of connected lakes could have qualitatively different impacts that are not accounted for by considering these waterbodies at the single-lake level.	investigates this topic. However, information to date supports current BLM decisions. See 4.1.1 Issue 1: Fish & Water Resources for further information.
29	On the basis of available data and areas of identified uncertainty, the agency should consider whether it has provided a margin of safety for lake populations, and describe how it determines what an adequate margin of safety is.	The margin of safety is built in to BMPs (and stipulations) and is in concurrence with State water regulatory agencies (ADNR and ADF&G). Allowing a small subset of lakes to deviate from BMP guidelines enables the BLM to document lake responses to water-use stressors and further contribute to data that may improve understanding of the issue. See the adaptive management discussion in 4.1.1 Issue 1: Fish & Water Resources
30	It may be that there is missing information and significant uncertainty about variables determining lake volumes, the resilience of tundra lake ecosystems, and the effects of water withdrawals. If missing information and uncertainty prevent BLM from excluding the possibility of significant environmental impacts from the proposed action's water withdrawals, the agency must consider these impacts in an EIS.	The BLM acknowledges that there are uncertainties in trying to measure and understand any natural process. See 4.1.1 Issue 1: Fish & Water Resources However, supporting information to date does not lead to a finding of significant environmental impacts to fish & water resources.
31	BLM must consider impacts from exploration activities on caribou and subsistence.	See Table 1.3 Section: Non threatened and endangered mammals and Section 4.1.2 Issue 2 Subsistence

#	Comment	Response
32	Activities at this scale in this local area within the Teshekpuk herd's winter range could have significant impacts on caribou. These impacts require analysis at the site-specific level.	See Table 1.3 section: Non threatened and endangered mammals
33	CPAI's proposed activities fall directly within the "heavy use" segment of Nuiqsut's contemporary subsistence use areas, including the caribou subsistence use area. Hunters and trappers may use the area for harvest of small mammals, birds, caribou, and furbearers. Caribou hunting is particularly important in Nuiqsut, because it is a relatively accessible and affordable activity, as compared to more expensive marine hunting activities. For this reason, limitations on the ability to hunt caribou "definitely hurt the people of Nuiqsut, especially those unable to pursue 'expensive' subsistence resources.	See Sections 4.1.2 Issue 2 Subsistence and 4.1.3 Issue 3: Sociocultural Systems.
34	Exploration activities, including construction and traffic, could displace game species from areas in which they would otherwise be present. "Local knowledge . . . indicates that exploratory activity displaces resources from the area of effect." Previous years' activities in these areas may have already changed behavioral patterns in wildlife species. These effects may be cumulative. Together with winter activities, such as the proposed action, summer activities—including aircraft activity—may also contribute to disturbances to species' behavior and presence in the area.	Table 1.3 section: Non threatened and endangered mammals. See Sections 4.1.2 Issue 2 Subsistence and 4.1.3 Issue 3: Sociocultural Systems.

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35	The proposed action could impose qualitatively new impacts on Nuiqsut’s subsistence users by encircling the community with oil and gas activities. With the proposed action, in addition to the eastern and northern areas, and the western Willow area, areas south of Nuiqsut would now experience exploration activities.	Specific impacts to subsistence areas and uses in the Nuiqsut area have been discussed and analyzed in numerous environmental documents including The Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Greater Moose’s Tooth One Development Project (BLM 2014 sections 4.3.5, 4.4.5, and 4.6.10.8) and National Petroleum Reserve-Alaska Integrated Activity Plan / Environmental Impact Statement (BLM 2012 Sections 4.3.13, 4.4.13, 4.5.13, 4.6.13, and 4.7.13). Harvest surveys and subsistence use area mapping provide quantitative data, ethnographic and sociocultural studies provided qualitative data, and the residents of Nuiqsut themselves provided original source data. In addition, direct, indirect and cumulative impacts (including any new impacts), from all proposed projects are analyzed, including the impacts from the proposed winter exploratory well project.
36	BLM should consider the potential impacts of the proposed action on subsistence practices, including cumulative impacts such as the “encircling”. In analyzing these impacts, the agency should consider displacement impacts that could be associated with exploration activities, including cumulative impacts from extant and reasonably foreseeable projects.	See Section 4.2.2 Issue 2: Subsistence. Cumulative effects to subsistence uses were found to be the same as those described in <i>The Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Greater Moose’s Tooth One Development Project</i> (BLM 2014). As stated in <i>The Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Greater Moose’s Tooth One Development Project</i> (BLM 2014) “The potential for additional exploration to the west of the community (including the conceptual GMT2 development) in addition to the oil and gas exploration to the south of the community associated with development of the Umiat road, the Bear Tooth Unit, and the Tofkat Prospect, will result in residents feeling even more surrounded by development, and left with fewer options for hunting in areas where no oil and gas infrastructure exist. The incremental construction of development-related infrastructure throughout the community of Nuiqsut’s traditional hunting and harvesting areas may result in the erosion of identity or cultural connection with those lands. This impact has already occurred with traditional use areas or camps within existing development areas that are no longer accessible to local residents.”
37	BLM should consider whether displacement would increase risks— including to safety and	See Section 4.1.2 Issue 2 Subsistence. The BLM analysis considers that the proposed action would result in temporary direct impacts to

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	<p>equipment, such as risks to snow machines from hardened ruts in the snow—and costs—including in terms of fuel and other provisions, forgone food supplies and income from furs, increases in travel time, and other opportunity costs—for subsistence hunters and trappers engaged in winter hunting and trapping. If risks and costs exist, BLM should consider the effects of these risks and costs, including effects on subsistence users’ abilities to engage in subsistence activities.</p>	<p>subsistence use areas (footprint of the activity), hunter avoidance of the areas, and localized deflection of subsistence resources from the areas. These impacts would require hunters to travel further to attempt to harvest resources, incurring greater expenses of time, fuel, wear on equipment, and greater risk of accidents. Some hunters may take advantage of ice roads and snow roads to travel, which could present a countervailing impact for those hunters. Many hunters would likely attempt to avoid the areas of activity entirely due to concerns over safety, their judgement that resources are less likely to be found near the activity, and general tendencies to avoid areas of industrial activity for subsistence. Large game (subsistence resources) could be deflected from areas of exploration activity. The activity occurs over a large area, all within Nuiqsut’s subsistence use area. Hunters may avoid the area and may have to travel further and longer to harvest. Impacts to subsistence use from this project in and of itself are expected to be moderate and short term (reduced access and reduced availability of resources).</p>
38	<p>If BLM adopts mitigation measures such as consultation and increased communication, BLM should explain how these measures will concretely change the allocation of costs to subsistence users or reduce game displacement effects in activity areas.</p>	<p>See Section 4.3 Mitigation and Monitoring. Consultation, including regular government-to-government consultation with the Native Village of Nuiqsut tribal council, ensures that the BLM has a complete understanding of impacts and of the effectiveness of existing mitigation and leads to the development of new mitigation measures to reduce impacts to subsistence. Ongoing implementation of compensatory mitigation actions for GMT1 are specifically designed and approved by the Nuiqsut Trilateral Committee to address impacts to subsistence, and the improved access to the Colville River (that to date has been the main goal of those actions) was identified as the primary mitigation measure to offset impacts (including costs) to subsistence users. Consultation and communication are not understood as measures that reduce game displacement effects per se other than when they result in permit-specific stipulations that change the time and place the activity</p>

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		is permitted (e.g., moratorium on non-essential aircraft activity during peak caribou hunting season).
39	If BLM cannot exclude the possibility of significant environmental impacts from the proposed action on subsistence use, the agency must consider these impacts in an EIS.	The BLM analyzed the environmental impacts of the Proposed Action and found no new significant impacts. See Finding of No New Significant Impacts (FONNSI).
40	BLM must also disclose and analyze the impacts and risks from hydraulic fracturing (“fracking”) under the proposed action.	<p>On the North Slope of Alaska, contamination of freshwater is not a concern during hydraulic fracturing operations. There is no liquid water, other than surface water, from the surface down to the base of the permafrost. Below the base of the permafrost only saltwater is present, with very few exceptions. CPAI will be setting casing below the base of the permafrost and cementing the casing back to surface (per federal regulations) prior to any hydraulic fracturing operations to protect all sources of freshwater. Federal regulation requires a pressure test to be performed to ensure the integrity of the casing and cement, after the casing is cemented in place prior to any further drilling or wellbore operations. In over fifty years of oil and gas production, Alaska has yet to have a single documented instance of subsurface damage to an underground source of drinking water.</p> <p>http://doa.alaska.gov/ogc/reports-studies/hydraulicfracwhitepaper.pdf</p> <p>In Alaska, hydraulic fracturing is a highly regulated practice. The AOGCC has adopted regulations, codified at 20 AAC 25.283, that govern the practice throughout the State, including in the NPR-A. The regulations require advance notice to landowners in the area, baseline water sampling, and detailed information for regulatory review of the proposed fracturing program, including the chemical ingredient name of each base fluid and additive to be used in the hydraulic fracturing fluid. The regulations are among the most rigorous in the nation.</p> <p>One of the key aspects of the AOGCC hydraulic fracturing regulations is the requirement for submittal of casing and cementing information, including cement evaluation logs, to demonstrate that wells are</p>

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		<p>cemented below the base of the lowermost freshwater aquifer, and that each hydrocarbon zone penetrated by the well is isolated. See 20 AAC 25.283(a)(5), (6). The AOGCC also requires data on the fracturing zone and containment zones, and potential conduits outside the containment zone. See 20 AAC 25.283(a)(5), (6). This focus on well design, well integrity, and containment zones ensure that hydraulic fracturing is approved only under circumstances where fracturing fluids will be properly contained.</p> <p>The fracturing fluid itself is about 0.5% additives, which are generally found in household products such as soap, cleaners, and food additives, and about 99.5% water and sand. Even before disclosure was required by AOGCC regulation, which it now is, ConocoPhillips voluntarily participated in a disclosure program that makes publicly available (through the Frac-Focus website) information about the chemicals used to fracture oil and gas wells on a well-by- well basis. More information about chemicals and other aspects of fracturing in ConocoPhillips operations generally, not specific to Alaska, can be found at the following website: https://www.powerincooperation.com/issues.aspx?issue=hydraulicfracturing#sthash.svQpCh2R.dpbs</p>
41	<p>Studies have drawn a strong connection between the recent rise in fracking wastewater injection and increased earthquake rates. And it is not just wastewater injection that can lead to earthquakes—the practice of fracking itself has been found to contribute to seismic events. Damage from earthquakes could cause leaks and spills that could contaminate water and soil. BLM must properly disclose and analyze the risks of induced seismic activity</p>	<p>Despite longstanding experience with hydraulic fracturing on the North Slope, there is no evidence of induced seismicity problems. In light of that experience, and the small scale of the proposed fracturing in these exploration wells, there is no reason to think that induced seismicity problems are a realistic concern for the proposed activities.</p> <p>The fracturing fluid that is used will flow back to tanks, then be hauled via truck for either delivery to a hydrocarbon recycle facility or injected into an existing Class II disposal well. The disposal wells are longstanding operations that are maintained under EPA oversight as part of the Underground Injection Control program.</p>

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42	Fracking also increases the truck traffic associated with drilling because of the additional supplies needed. Indeed, a U.S. Government Accountability Office study found that up to 1,365 truckloads can be required for the drilling and fracturing of a single well. This traffic will further exacerbate the numerous harms from truck traffic associated with the proposed action, including impacts on subsistence hunting.	<p>Comparison to hydraulic fracturing in unconventional developments is misplaced. Any proposed development project in the NPR-A would go through a public comment period in which the benefits and risks of a development fracturing program could be discussed, if relevant to the proposed development. More importantly for present purposes, the scale of the proposed exploration fracturing operations are in keeping with fracturing done previously in exploration wells in the NPR-A, including in 2016, and much smaller than the typical operations in lower 48 states that are cited as examples in the AWL comment letter. A typical unconventional hydraulic fracturing operation in Texas, for example, would involve around 15,000,000 pounds of proppant, but each of the 2017-2018 NPR- A exploration wells program will involve approximately 50,000 pounds of proppant, less than one-percent.</p> <p>Similarly, a typical unconventional well in Texas would involve around 250,000 barrels of fluid per well; but a well in this winter’s exploration program in the NPR-A will involve about 1,200 barrels of fluid, again less than one percent. The NPR-A fracturing jobs are smaller by orders of magnitude than the examples used by AWL. Considering the truck traffic that will be involved for initial water delivery, equipment delivery, and flowback disposal, the overall traffic expected for each proposed fracturing job is somewhere around one percent of the 1,365 trucks cited as an example in the AWL comment letter.</p>
43	BOEM must conduct a full and fair analysis of the potential impacts of fracking, as required by NEPA, before it can approve CPAI’s exploration drilling plan.	BOEM has no onshore regulatory authority on BLM lands. The APDs received from ConocoPhillips are all onshore, not offshore (which could subject them BOEM). The BLM does not have a specific Hydraulic Fracking Rule in place at this time, but rather follows the State of Alaska regulations for fracking.
44	Under NEPA, an agency must consider a range of reasonable alternatives to its proposed action. NEPA requires the agency to study, develop, and	BLM considered a range of reasonable alternatives (Section 2.3) to the proposed action; however, none of them met the purpose and need of the project (Sections 1.2 and 1.2). The BLM NEPA handbook under

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	<p>describe appropriate alternatives to recommended courses of action. The existence of a viable but unexamined alternative renders an environmental impact analysis, including an EA, inadequate.</p>	<p>Section 8.3.4.2 Alternatives in an EA, states: “EAs shall ‘include brief discussions ...of alternatives as required by section 102(2)(E)...’ (40 CFR §1508.9(b)). Section 102(2)(E) of the NEPA provides that agencies of the Federal Government shall ‘study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.’” After completing the analysis of the alternatives, the Arctic District Office did not find unresolved conflicts concerning alternative uses of available resources.</p> <p>H-1790-1 further states: “Therefore, at a minimum your EA must include documentation of the current and future state of the environment in the absence of the proposed action. This discussion does not need to be a separate section called “No Action Alternative,” but can be part of the environmental effects section of the EA to show the change in effects brought about by the proposed action or alternatives.” The Arctic District Office chose to include the No-Action as an alternative.</p>
45	<p>Within the range of reasonable alternatives, the agency should consider alternatives in which BLM approves only parts of CPAI’s proposed activities; in connection with these alternatives, BLM must consider whether these limited approvals would mitigate the environmental impacts from water withdrawals and effects on subsistence use that may be associated with the proposed action.</p>	<p>BLM considered alternatives, which limited the number of wells to be drilled and the reduction of water that is allowed to be withdrawn. However, these alternatives did not meet the purpose and need (Section 1.1 and 1.2). If the company were to scale down the proposed action to cover multiple years it may be argued to cause more of an impact as they would be using the resources for multiple years versus the one year for which they have applied.</p>
46	<p>Among the range of alternatives, BLM should consider not approving activities in the Stony Hill area for this exploration season.</p>	<p>Ownership of an O&G lease has an implied opportunity to explore for O&G on that lease CFR §3101.1-2). Federal regulations require a leaseholder to explore for the resource (43 CFR §3107). CPAI is proposing to operate as BLM regulations require, and their proposed</p>

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		activity is well within the scope of activity analyzed in the NPR-A IAP/EIS to which this EA tiers.
47	The agency should also consider an alternative in which some or all activities in the Greater Mooses Tooth and Bear Tooth Units are not approved for this exploration season. The agency should consider relative impacts with respect to water withdrawals and effects on subsistence use for these alternatives as compared to the proposed action.	Ownership of an O&G lease has an implied opportunity to explore for O&G on that lease (43 CFR §3101.1-2). Federal regulations require a leaseholder to delineate the resource and have a continued drilling obligation to hold their unit (43 CFR §3137.82). CPAI is proposing to operate as BLM regulations require, and their proposed activity is well within the scope of activity analyzed in the NPR-A IAP/EIS to which this EA tiers. BLM considered an alternative which reduced the number of wells but it did not meet the purpose and need and was eliminated from detailed analysis.
48	BLM Must Determine If the Proposed Action Would Significantly Restrict Subsistence Use, and, If So, Only Proceed If It Can Make ANILCA Section 810 Findings.	A Section 810 Evaluation is required for any action to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands in Alaska under any provision of law authorizing such actions. This applies whether the action is a request from outside the agency or initiated by the agency. Conducting ANILCA 810 evaluations in Alaska on public lands is mandatory for virtually all Federal land use decisions. An ANILCA 810 Evaluation was completed for the winter exploratory drilling project and found that the direct and indirect effects of the proposed action would not significantly restrict subsistence uses.
49	BLM must consider whether the impacts of the proposed action on Nuiqsut subsistence uses, including the cumulative impacts flowing from the “encircling” of Nuiqsut by oil and gas infrastructure, would reduce or eliminate the use of public lands needed for subsistence purposes.	See Sections 4.2.2 Issue 2: Subsistence and 4.2.3 Issue 3: Sociocultural Systems. Cumulative effects to subsistence uses were found to be the same as those described in <i>The Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Greater Moose’s Tooth One Development Project</i> (BLM 2014). As stated in <i>The Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Greater Moose’s Tooth One Development Project</i> (BLM 2014) “The potential for additional exploration to the west of the community (including the conceptual GMT2 development) in addition to the oil and gas exploration to the south of the community associated with development of the Umiat road, the Bear Tooth Unit,

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		<p>and the Tofkat Prospect, will result in residents feeling even more surrounded by development, and left with fewer options for hunting in areas where no oil and gas infrastructure exist. The incremental construction of development-related infrastructure throughout the community of Nuiqsut's traditional hunting and harvesting areas may result in the erosion of identity or cultural connection with those lands. This impact has already occurred with traditional use areas or camps within existing development areas that are no longer accessible to local residents."</p>