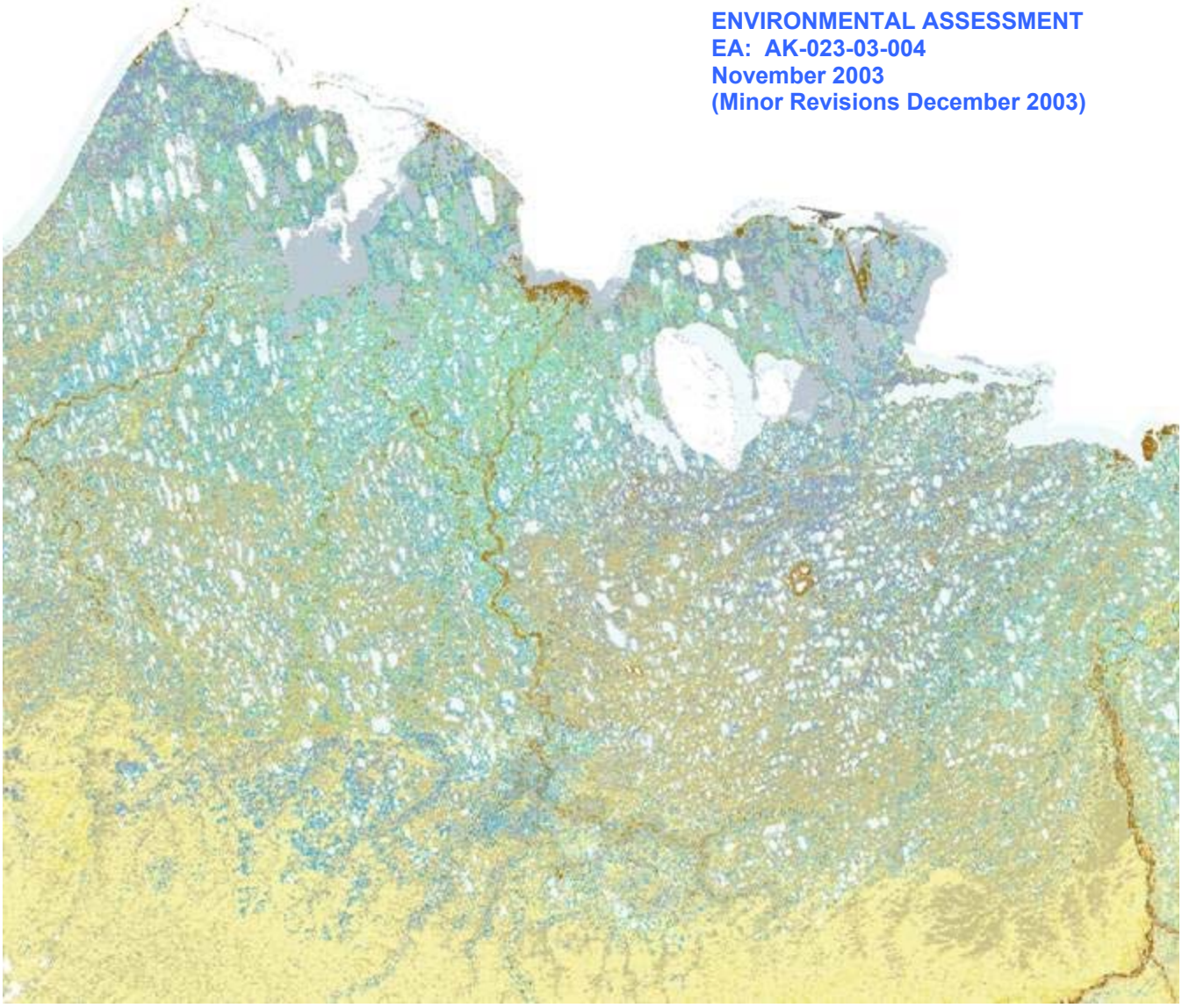
ENVIRONMENTAL ASSESSMENT
EA: AK-023-03-004
November 2003
(Minor Revisions December 2003)



ENVIRONMENTAL ASSESSMENT

EA: AK-023-04-004

National Petroleum Reserve-Alaska (NPR-A)
2003-2008 Exploration Drilling Program

ConocoPhillips Alaska, Inc.

Prepared by: USDOI Bureau of Land Management
Northern Field Office
Anchorage Field Office

November 2003
(Minor Revisions December 2003)

Technical Assistance:
Hoefler Consulting Group
Anchorage, Alaska

ENVIRONMENTAL ASSESSMENT

EA: AK-023-04-004

National Petroleum Reserve-Alaska (NPR-A)
Northeast Planning Area
Winter Exploration Drilling Program

ConocoPhillips Alaska, Inc.

NOVEMBER 2003
(Minor Revisions December 2003)

Prepared By:

USDOI Bureau of Land Management, Alaska
Northern Field Office
Anchorage Field Office

Technical Assistance:

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Anchorage, Alaska 99503

ENVIRONMENTAL ASSESSMENT

Title: National Petroleum Reserve-Alaska (NPR-A)
Northeast Planning Area Winter Exploration Drilling Program

EA Number: AK-023-04-004

Serial Number: AA-084129, AA-081831, AA-084130, AA-081793
AA-081810/AA-081808, AA-081806, AA-081857, FF-092931

Applicant: ConocoPhillips Alaska, Inc.
P.O. Box 1100360
Anchorage, Alaska 99510-0360

Date Prepared: November 2003

District: Northern Field Office
Planning Unit: NPR-A, Northeast Planning Area

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Lands Involved: Proposed alternate routes for approximately 62.1 miles of ice road extension, including various ice road spurs to seven new exploration ice drill pads in the ConocoPhillips exploration prospects in the Northeastern NPR-A. Also, proposed amendment to Right of Way (ROW) FF-92931 to previously permitted exploration wells. Specific locations are identified in the case files and project plans. The drilling pads are located as follows:

T11N, R5W, Sec. 27, Umiat Meridian (Kokoda 1)	T10N, R 1E, Sec. 4, Umiat Meridian (Carbon 1)
T11N, R5W, Sec. 10, Umiat Meridian (Kokoda 2)	T11N, R1E, Sec. 29, Umiat Meridian (Summit 2)
T9N, R2W, Sec. 5, Umiat Meridian (Powerline 1)	T11N, R1E, Sec. 20, Umiat Meridian (Scout 1)
T10N, R1W, Sec. 9 / 10, Umiat Meridian (Grandview 2)	

This Environmental Assessment (EA) has been prepared to meet the requirements of the National Environmental Policy Act (NEPA), and to support U.S. Department of Interior (USDOI) Bureau of Land Management (BLM) decision-making on permits required to construct and implement the proposed project. The scope of the EA includes analysis of effects of the proposed exploration activity and alternatives, including the no-action alternative. The EA also addresses the impacts of hypothetical oil and gas field development if an economic discovery is made during this activity.

Note: Minor Revisions comprised the addition of Sections 4.5, 4.6, 4.7 and 4.8. No other revisions were made.

The EA is written as a stand-alone document, but is tiered to, and incorporates by reference the following related documents, which are available for review at the Northern Field Office, BLM, 1150 University Avenue, Fairbanks, Alaska 99709, or the Alaska Resources Library and Information Services, 3150 C Street, Anchorage, Alaska, 99503:

- Environmental Assessment (EA: AK-023-03-032), Access To and Drill Stacking at Inigok. USDOI BLM, Northern Field Office, Arctic Management Team. February 2003.
- Environmental Assessment (EA: AK-023-03-027), Storage Ice Pads, USDOI BLM, Northern Field Office, Arctic Management Team. February 2003.
- Environmental Assessment (EA: AK-023-03-008). National Petroleum Reserve-Alaska (NPR-A) Exploration Drilling Program, Puviaq #1 and #2 Exploration Wells. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2002.
- Environmental Assessment (EA: AK-023-02-033), Puviaq Storage Site Project, National Petroleum Reserve-Alaska. USDOI BLM, Northern Field Office, Arctic Management Team. March 2002
- Environmental Assessment (EA: AK-023-02-005), National Petroleum Reserve-Alaska (NPR-A) 2001-2006 Exploration Drilling Program. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2001 (Minor revision January 2002).
- Environmental Assessment (EA: AK-023-02-004), National Petroleum Reserve-Alaska (NPR-A) Altamura Prospect Exploration Program. December 2001 (Minor revision January 2002).
- Environmental Assessment (EA: AK 023-01-003), National Petroleum Reserve-Alaska (NPR-A) Exploration Program, Winter Drilling 2000-2006. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2000 (minor revision March 2001).
- Environmental Assessment (EA: AK-023-01-001), Trailblazer Exploration Drilling Program, 2000-2005, National Petroleum Reserve-Alaska (NPR-A). USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2000 (minor revision January 2001).
- Environmental Assessment (EA: AK-020-00-011), 1999-2000 Winter Exploration Drilling Program in the National Petroleum Reserve-Alaska (NPR-A). USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. January 2000.
- Northeast National Petroleum Reserve-Alaska Final Integrated Activity Plan/Environmental Impact Statement. BLM, in cooperation with the Mineral Management Service. August 1998. [http://aurora.ak.blm.gov/npra/final/ html/]

Other documents considered in the preparation of this EA include:

- Finding of No Significant Impact and Record of Decision FF-093906. BLM NPR-A Permit 281001. February 2003. [TotalFinaElf E&P USA, now Total E&P USA, Inc.]
- Finding of No Significant Impact and Record of Decision FF-093905. Permit 298401. February 2003.
- Finding of No Significant Impact and Record of Decision AA-081854. Application for Permit to Drill and Right-of-Way. BLM. January 2003. [ConocoPhillips]
- Finding of No Significant Impact and Record of Decision FF-093572. BLM NPR-A Permit 298401. March 28, 2002. [ConocoPhillips]
- Finding of No Significant Impact and Record of Decision AA-081780. Application for Permit to Drill and Right-of-Way. BLM. January 2002. [Phillips]
- Finding of No Significant Impact and Record of Decision AA-081736 [Anadarko]
- Finding of No Significant Impact and Record of Decision AA-081780. Application for Permit to Drill and Right-of-Way. BLM. March 2001 [Phillips]
- Finding of No Significant Impact and Record of Decision AA-081752. Application for Permit to Drill and Right-of-Way. BLM. January 2001 [BPX]
- Finding of No Significant Impact and Record of Decision AA-081794. Application for Permit to Drill and Right-of-Way. BLM. January 2000. [ARCO]
- Record of Decision, Northeast National Petroleum Reserve-Alaska. BLM. October 1998. [http://aurora.ak.blm. gov/npra/final/rodtitle.html/]

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APPENDICES

1 INTRODUCTION

ConocoPhillips Alaska, Inc. (CPAI) has applied for permits to access and drill existing valid oil and gas leases as part of an expanded winter exploration program in the National Petroleum Reserve-Alaska (NPR-A). CPAI, formerly known as Phillips Alaska, Inc. (PAI) and ARCO Alaska Inc. (ARCO), has completed four seasons of exploration work in the NPR-A since January 2000. CPAI submitted permit applications, including the BLM Right-of-Way (ROW) application and Surface Use Program, to federal, state, and local agencies on April 25, August 11, and November 10, 2003. CPAI plans to file applications for Permits to Drill (APDs) in accordance with 43 Code of Federal Regulations (CFR) 3160. CPAI's BLM Nationwide Oil and Gas Bond number is 888912.

This Environmental Assessment (EA) has been prepared to support BLM decision-making, to identify and develop appropriate mitigation measures, and to satisfy requirements of the National Environmental Policy Act (NEPA).

1.1 HISTORY OF ACTIVITY IN THE NPR-A

In 1923, President Harding created the 23-million-acre Naval Petroleum Reserve Number 4, later renamed National Petroleum Reserve-Alaska.[1] From 1945 to 1985, the federal government drilled at 135 sites and private industry drilled 1 test well in the NPR-A. In 1997, a new planning initiative evaluated resources and potential for future oil and gas leasing in the NPR-A. In August 1998, an Integrated Activity Plan (IAP) with an associated Environmental Impact Statement (EIS)[2] for the Northeast NPR-A Planning Area was released. In October 1998, the Secretary of the Interior published a Record of Decision (ROD) adopting the IAP/EIS[3] and making approximately 4 million acres in the Planning Area available for oil and gas leasing.

Based on the ROD, BLM held an oil and gas lease sale, and issued leases under authority of the Naval Petroleum Reserves Production Act of 1976, as amended (NPRPA). Under those leases, six winter exploration drilling programs and associated activities have been evaluated and authorized in the NPR-A.[4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,19, 20, 21] Proposed development is also under review.[22]

Since 1999, BLM has evaluated 45 new exploration drilling sites and associated ROW corridors; although, only 14 wells have been drilled during four subsequent winter seasons of exploration activity. Most exploration programs include contingencies (e.g., multiple drilling site locations and wells) to provide operational flexibility and the ability to adapt to changing conditions. Drilling is limited to only the most promising prospects, and only a portion of the evaluated program is actually completed.

CPAI believes that significant recoverable oil potential exists within the NPR-A, and is proposing to conduct additional exploratory on its leases. The proposed action, summarized below and detailed in Section 2, is tiered to and supplements previously evaluated and approved exploration activities (referenced above).

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[1] USGS Professional Paper 1240-C. The National Petroleum Reserve in Alaska, Earth Science Considerations. 1985. p. C 1-5.

[2] USDOI. Northeast NPR-A Final Integrated Activity Plan/Environmental Impact Statement (IAP/EIS). Vol. I and II. August 1998.

[3] Northeast NPR-A IAP/EIS Record of Decision (ROD). October 1998. p. 1.

[4] BLM EA: AK-020-00-011. January 2000.

[5] BLM Finding of No Significant Impact (FONSI) and ROD AA-081794. January 2000.

[6] BLM EA: AK-023-01-003. December 2000 (minor revision March 2001).

[7] BLM FONSI and ROD AA-081780, March 2001.

[8] BLM EA: AK-023-01-001. November 2000 (minor revision January 2001).

[9] BLM FONSI and ROD AA-081752, January 2001.

[10] BLM EA: AK-023-02-005. December 2001 (minor revision January 2002).

[11] BLM FONSI and ROD AA-081780, January 2002.

[12] BLM EA: AK-023-02-004. December 2001 (minor revision January 2002).

[13] BLM FONSI and ROD AA-081736, January 2002.

[14] BLM EA: AK-023-02-033. March 2002.

[15] BLM FONSI and ROD FF-093572. March 2002.

[16] BLM EA: AK-023-03-008. December 2002.

[17] BLM FONSI and ROD, AA-081854, January 2003.

[18] BLM EA: AK- 023-03-027, February 2003.

[19] BLM FONSI and ROD, FF-093905, February 2003.

[20] BLM EA: AK-023-03-032. February 2003.

[21] BLM FONSI and ROD FF-093906. February 2003.

[22] Alpine Satellite Development Plan.

1.2 PROPOSED ACTION

CPAI (i.e. the Applicant) has applied to expand its existing NPR-A exploration program to include new drilling sites and water sources (See Figure 1). To the extent practicable, the Applicant will use existing authorizations to access the project area.

The expanded drilling program will include up to seven new drilling locations with access routes, staging areas, and possibly an ice airstrip. Lake water will be required to support project operations (i.e., ice road and pad construction, drilling, and domestic use). The program will span up to five winter drilling seasons, beginning in December 2003, with the drilling schedule contingent upon permitting, weather, ongoing data analysis, and funding.

1.3 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the proposed project is to permit the Applicant to access valid federal leases in the NPR-A, for drilling wells and sidetracks at any of the proposed pad locations, within a 5-year timeframe. The project is designed to meet a number of CPAI needs and objectives, including:

- Obtain the ROW to access drilling sites in a manner that allows for maximum operations during any one winter seasonal in a cost effective manner
- Acquire sufficient subsurface information to satisfy the Applicant's economic and exploration performance criteria
- Comply with all related stipulations of the ROD and associated permits and approvals.

The proposed project is needed to help determine if prospects on the Applicant's leases contain economically recoverable oil and gas. Need for the project is implicit in the growing demand for oil and gas worldwide, accompanied by growing concern in the U.S. over dependence on foreign oil supplies. The project is also needed to replace diminishing North Slope oil supplies and maintain design efficiency of the Trans Alaska Pipeline System (TAPS). Revenues from production are needed to support local, state, and national economies. The project is also intended to provide the Applicant with operational flexibility, while minimizing environmental impact. Alternatives to the proposed action are evaluated on the basis of their effectiveness in meeting the stated objectives.

1.4 RELATED STATUTES, REGULATIONS, POLICIES, AND PROGRAMS

The 1998 IAP/EIS was completed to fulfill BLM's responsibility to manage lands in the planning area under the authority of the NPRPA (as amended) and Federal Land Policy and Management Act of 1976 (FLPMA), NEPA, Alaska National Interest Land Conservation Act (ANILCA), and the Wild and Scenic Rivers Act. The current EA is tiered to and incorporates by reference the 1998 IAP/EIS and associated ROD, and the six previous drilling EAs, three access/storage EAs, and associated Findings of No Significant Impact (FONSI) and RODs.[23]

The proposed project is consistent with BLM management planning for the Northeast NPR-A. The 1998 IAP/EIS assessed potential use of the Northeast NPR-A for oil exploration and development, a process that involved extensive input from other federal agencies, the State of Alaska (State), the North Slope Borough (NSB), thousands of individuals, and many institutions.[24] The IAP/EIS and ROD emphasize restrictions on surface activities, consultation with local residents, and coordinated scientific studies to protect wildlife habitat, subsistence use areas, and other resources. The ROD includes 79 stipulations as special mitigation measures for activity on oil and gas leases under the IAP. Applicable stipulations from the ROD will be applied to the proposed action.

BLM is currently conducting land-use planning and impact assessment of future management of the Northwest NPR-A. This plan considers resources such as wilderness, wildlife, and subsistence resources, as well as current and potential future activities on these lands, including possible development of the area's oil and gas potential. The Northwest NPR-A Draft IAP/EIS was made available in January 2003, describing four possible management alternatives for 8.8 million acres of public lands in the northwest NPR-A.[25]

[23] See documents cited in footnotes 4-21.

[24] 1998 ROD. Summary.

[25] USDOI. Northwest NPR-A Draft IAP/EIS. January 2003.

The current analysis includes approximately 20 Stipulations and 21 Required Operating Procedures that indicate where, when, and under what conditions oil and gas activities may occur under each alternative. Additionally, on June 23, 2003, BLM issued a Notice of Intent to amend the 1998 Northeast IAP/EIS. This EA, however, is based solely on requirements for exploration drilling set forth in the 1998 ROD.

1.4.1 Federal Laws and Regulations

Key federal controls over the proposed, described in previous EAs incorporated by reference, include: NPRPA, FLPMA, NEPA, ANILCA, Coastal Zone Management Act (CZMA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), National Historic Preservation Act (NHPA), Alaska Native Claims Settlement Act (ANCSA), and the Clean Water Act (CWA). Other federal laws, regulations and executive orders (EO) governing the proposed action include: Clean Air Act, Safe Drinking Water Act (including the Underground Injection Control Program), Resource Conservation and Recovery Act, Fish and Wildlife Coordination Act, Migratory Bird Treaty Act, Native American Graves Protection and Repatriation Act, the Archaeological Resource Protection Act, the Magnuson-Stevens Fishery Conservation and Management Act, EO 11988 (floodplain management), EO 11990 (wetlands protection), EO 12898 (environmental justice), EO 13112 (non-native species protection), EO 13175 (government-to-government consultation), and EO 13212 (streamlining energy-related projects). [26]

The National Energy Policy adopted by the President in May 2001, calls for increased domestic exploration and production, and directs BLM to address issues vital to the current and future status of the nation's energy program. [27] Subsequently, BLM developed an implementation plan that, among other things, directs the agency to continue ongoing operations associated with existing leases (APDs, inspection and enforcement, and NEPA compliance) within the NPR-A.

[26] Described in Section 1. EA AK-020-00-011 and EA: AK-023-03-008.

[27] National Energy Policy. Report of the National Energy Policy Development Group. May 2001.

1.4.2 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.[28] Primary requirements are listed in Table 1**.**

1.4.3 Related Environmental Analyses

The environmental analyses most closely related to the proposed action include:

- 1998 IAP/EIS and ROD for the Northeast NPR-A.
- EA: AK-020-00-011 for the NPR-A 1999-2000 Winter Exploration Drilling.
- EA: AK-023-01-001 for the NPR-A Trailblazer Exploration Program.
- EA: AK-023-01-003 for the NPR-A 2001-2006 Winter Drilling Exploration Program.
- EA: AK-023-02-004 for the Altamura Prospect Exploration Program
- EA: AK-023-02-005 for the NPR-A 2001-2006 (Expanded) Exploration Drilling Program.
- EA: AK-023-02-033 for Puviaq access and ice storage pad construction.
- EA: AK-023-03-008 for Puviaq Exploration Drilling Program
- EA: AK-023-03-027 for ice storage pad construction near Kokoda and Carbon.

For all exploration programs, the EA led to a FONSI and a ROD, and a finding that the project was in compliance with provisions for protecting subsistence use and access, as required by ANILCA Title VIII.[29] For the 2001 Foothills lease sale, the ADNR also concluded that exploration drilling did not result in significant long-term direct, indirect, or cumulative impacts. [30] Approximately one half of the lease sale area lies adjacent to the NPR-A, southeast of the Colville River.

[28] Many required local, state and federal authorizations except from the BLM and the AOGCC have been issued.

[29] BLM FONSI and ROD documents cited in footnotes 5, 7, 9, 11, 13, 15, 17, 19, and 21.

[30] Final Findings of the Director, Oil and Gas Lease Sale, North Slope Foothills Areawide 2001. Alaska Department of Natural Resources (ADNR) Division of Oil & Gas. Anchorage, Alaska. February 7, 2001.

Table 1. Permits and Authorizations

Federal Authorizations and Approvals	
Bureau of Land Management (BLM)	▪ ROW authorization for access ▪ Application for Permit to Drill (APD)
U.S. Fish and Wildlife Service (USFWS)	▪ Letter of Authorization for Incidental Take of Polar Bears; Polar Bear/Personnel Encounter Plan ▪ Threatened and Endangered Species Consultation [a]
U.S. Environmental Protection Agency (EPA)	▪ Domestic Wastewater Discharge, under National Pollutant Discharge Elimination System (NPDES) General Permit No. AKG-31-0000 or AKG-33-0000 (drilling/camp contractors) ▪ Spill Prevention, Control, and Countermeasures (SPCC) Plan (drilling/testing contractors)
National Marine Fisheries Service (NMFS)	▪ Essential Fish Habitat Consultation [b]
State Authorizations and Approvals	
Alaska Department of Natural Resources (ADNR)	▪ ACMP Consistency Determination [c] ▪ Program General Concurrences (e.g., GCD 34) ▪ Land Use Permit for tundra travel and ice road construction on state lands ▪ Temporary Water Use Permit ▪ Cultural Resources Consultation with SHPO ▪ Fish Habitat Permit (Office of Habitat Management and Permitting)
Alaska Department of Environmental Conservation (ADEC)	▪ Temporary Storage of Drilling Wastes ▪ Air Quality Permit by Rule (Drilling rig and storage tanks, if needed) ▪ Oil Discharge Prevention and Contingency Plan (ODPCP) ▪ Certificate of Financial Responsibility ▪ Wastewater and Water Treatment System Approval (drilling/camp contractors)
Alaska Oil and Gas Conservation Commission (AOGCC)	▪ Permit to Drill ▪ Approval for annular disposal of drilling wastes (optional)
Local Authorizations and Approvals	
North Slope Borough (NSB)	▪ Development Permit (for related project elements)

[a] No-Effect Determination was provided by the USFWS on September 22, 2003 for Steller's and spectacled eiders. See Appendix A.

[b] Essential Fish Habitat evaluation by BLM determined that no consultation with NMFS is required. See Appendix B.

[c] A determination that no ACMP review was needed was issued May 14, 2003, by the Division of Governmental Coordination (now the ADNR Office of Project Management and Permitting) to CPAI, BLM, and other key agency representatives.

1.4.4 Land Status

All seven drill sites described in the proposed action are located on NPR-A lease tracts held by CPAI and Anadarko Petroleum Corporation, under jurisdiction of the BLM. Primary access to the project area from the NPR-A federal land boundary will be via a ROW previously authorized by the BLM, and several new local access routes within the NPR-A. The proposed action lies wholly within the NSB. Traditional Land Use Sites (TLUS, defined in Stipulation 64) will be avoided; Native Allotments will not be crossed unless authorized by the allotment owner and the Bureau of Indian Affairs (BIA).

1.5 PUBLIC INVOLVEMENT

Development of the 1998 IAP/EIS involved extensive input from other federal agencies, the State, the NSB, thousands of individuals, and many institutions.[31] Since the 1999 lease sale, a number of meetings and consultations have been held with residents of Nuiqsut, Barrow, Anaktuvuk Pass, Atqasuk, and Wainwright to discuss NPR-A exploration plans. Table 9 (Section 5.1) presents a summary of community involvement associated with exploration program planning in the Northeast NPR-A.

[31] 1998 ROD. Summary.

There is also an extensive public/agency involvement program associated with development of the Northwest Planning Area IAP/EIS that has addressed issues associated with activity in the northeast planning area.[32] A number of public and community meetings are also being held to discuss potential development at two NPR-A sites and several sites in the Colville Delta area.

Development of the proposed project reflects input gained from meetings with local communities, the NSB, the NPR-A Subsistence Advisory Panel (SAP), and other agencies and entities. CPAI has an active program that provides additional opportunities for public involvement (e.g., newsletters, local meetings, web site) and includes local government and community members in the review of proposed well sites, access routes, and stream crossings to obtain traditional knowledge of subsistence resources and to identify site-specific environmental concerns.

All of the previously evaluated exploration drilling programs in the NPR-A were public-noticed by BLM and as part of the State ACMP consistency review. Public and agency comments were considered, and each exploration program received an ACMP Consistency Determination and was issued all required federal, state, and local permits--some with stipulations to mitigate specific issues of concern. However, because expected effects on the coastal zone are expected to be *de minimus*, it was determined that the proposed action would not require a coastal management program review (see footnote C, Table1).

1.6 BLM DECISION PROCESS

BLM's decision on the proposed action will be based on statutory and regulatory authority. The IAP/EIS served as required NEPA documentation for the first lease sales. EA: AK-020-00-011, EA: AK-023-01-001, EA: AK-023-01-003, EA: AK-023-02-004, EA: AK-023-02-005, EA: AK-023-02-033, and EA: AK-023-03-008 have served as additional NEPA analyses for site-specific lease activities. These EAs are incorporated in their entirety by reference per CEQ Regulation 40 CFR 1502.21. Prior to authorizing the proposed action, BLM must conduct a new site-specific NEPA analysis and determine whether the proposed project should be approved, rejected, or modified, and if additional stipulations are needed.

This EA will evaluate the impacts of winter exploration activities that may span multiple winter drilling seasons. A multi-year authorization provides flexibility for the applicant to reschedule elements of the project, if necessary, without the lengthy process of reevaluation. The evaluation will be based on the governing stipulations as well as actual experience with exploration activity in the NRP-A.

Over the past four years, six winter exploration programs have been completed in the NPR-A, all using similar plans and methods of operations. Effects of associated activities (i.e., overland transport, water use, ice road/pad construction, drilling, other operations and maintenance, and abandonment and restoration) are known. Several minor problems have occurred, but these have been successfully corrected or mitigated. There have been no significant direct, indirect, or cumulative impacts. As a result, the current analysis will focus on any differences in proposed activities and locations that might result in impacts different from those evaluated in previous NEPA analyses.

To date, required permits and authorizations for six of the seven drill sites with access routes and a multi-season ice storage pad have been issued, except those from BLM and from the AOGCC for drilling. The seventh site was added late to the program, and permits are still pending. An LOA for Incidental Take of Polar Bears is also pending.

[32] Northwest Planning Area Draft IAP/EIS. pp IV-227 – 229.

Figure 1 Project Vicinity Map

2 PROPOSED ACTION AND ALTERNATIVES

The proposed action includes drilling at up to seven locations during a multiple year winter exploration program in the NPR-A. Details are provided in the Applicant's Plan of Operations and Surface Protection Plan. Proposed activities are similar to those completed in the NPR-A during the 1999-2003 winter seasons. The proposed description is therefore, tiered to the EIS, with the 2000-2003 Exploration EAs incorporated by reference for main project elements.[33]

Notices of Staking have been filed, with field inspections performed during summer 2002 and 2003, as required for BLM approval of CPAI's surface use plan. New access routes and stream crossings have also been field examined. Approval to drill at any proposed or previously approved sites has been requested to accommodate changes in exploration strategy and funding priorities as new data become available. Prior to drilling, the Applicant will provide BLM with the location of all well sites to be drilled, including bottomhole locations.

2.1 THE PROPOSED ACTION

The proposed action is summarized in Table 2 and depicted on Figure 2.

2.1.1 Access and Construction

Five drill sites (Powerline 1, Grandview 2, Summit 2, Carbon 1, and Scout 1) are near extensions of the previously evaluated main exploration area in the NPR-A. Kokoda 1 and 2 are approximately 25 miles west of previous CPAI drilling efforts and approximately 10 miles southwest of the previously evaluated Trailblazer exploration program. Drill pads will be approximately 500 by 500 feet in area and 6 inches thick, with additional ice thickness under the drill rig and cuttings storage areas. Drill site locations shown in Table 3 were surveyed, staked, and inspected by BLM.

Initial access will be by packed snow trail and/or ice road via existing, authorized ROW. From this ROW, access to the drill site locations will follow new alignments. CPAI also proposes to amend the existing ROW to several previously permitted exploration wells (e.g. Spark 4). New access corridors have been cleared of archaeological and cultural resources.

Rolligons and other ATVs may be used to mobilize a small camp, equipment, and personnel to begin construction of ice roads and pads. To expedite operations, Rolligons may transport the drill rig and may be used to prepack or water the ice road to accelerate frost penetration. The Applicant has requested approval to enter the NPR-A for this purpose prior to the general opening of ground operations.

Construction of up to 62.1 of ice road will be typically 35 feet wide and 6 inches thick, with ice pullouts or widened areas to facilitate rig transport uphill and for staging equipment. Rig mats or other devices used to support ice construction will be removed prior to the end of the annual operating season. The ice road route has up to nine new stream crossings.

Approximately five remote ice pads (about 300 ft x 300 ft) may be located along the ice road from Kuparuk to the Kokoda sites to support construction. A temporary ice airstrip may be constructed, at locations to be determined. A multi-season ice pad may be constructed near the Kokoda or Carbon drill site or at another approved location in the NPR-A.

Up to 92 million gallons of freshwater have been requested for ice road/pad construction, maintenance, drilling operations, and camp use. Proposed new water source lakes are shown in Table 4. Seven of the new water supply lakes were found to either have fish present or have the potential to provide overwintering fish habitat.

[33] See EIS/IAP, Section IV.A.1.b and Section 2 of EAs cited in footnotes 4, 6, 8, 10, 12, 14, 16, 18, and 20.

Table 2. Summary of Proposed Project

Project Component	Program Total
No. of wells Well cellar area[a]	Up to 14 wells/sidetracks Up to 0.25 acres
Ice Drill Pads	Up to 7 pads; 40.6 acres
Ice Staging Pads	Up to 18 pads (3 per year for 5 years); 90 acres
Main access ice road	62 miles new ROW; 263 acres
Ice Airstrip	Up to 5 airstrips (1 per year@ 8 acres); 40 acres
Water usage	92 MG

All numbers are approximate; estimated for environmental assessment purposes only.

[a] Installed through the ice drill pad; one for each surface hole @0.018 ac.

Table 3. Ice Drill Pad Locations (All Federal Land)

Name	BLM Lease No.	New ice road ROW	Section Location (Umiat Meridian)	
Kokoda 1	AA-084129	33.5 miles	27-T11N-R5W	296' FNL & 626' FEL
Kokoda 2	AA-081831	1.0 mile	10-T11N-R5W	1302' FSL & 1978' FEL
Powerline 1	AA-081793	14.8 miles	5-T9N-R2W	850' FSL & 2117' FWL
Grandview 2	AA-081808; AA-081810	1.3 miles	9&10-T10N-R1W	246' FNL & 15' FEL
Carbon 1	AA-081806	0.5 mile	4-T10N-R1E	1765' FSL & 2125' FEL
Summit 2	AA-081857	4.0 miles	29-T11N-R1E	2563' FNL & 1666' FWL
Scout 1	AA-081857	1.0 mile [a]	20-T11N-R1E	572' FSL & 231' FWL

Coordinates are Clark 1866 (NAD 27)

[a] An additional 6 miles of ice road to Spark 4 and the previously authorized ROW is also proposed as optional routing

Table 4. New Water Sources

Lake ID	Township	Range	Section	Surface Area (acres)	Depth (feet)	Calculated Total Lake Volume (MG) [a]	Fish [b] Present	15% of winter volume deeper than 7 ft (MG)	30% of winter volume deeper than 5 ft. (MG)	Maximum Withdrawal Volume Requested [c] (MG)
M0233 [d]	11N	5W	10/11	149.2	10.6	151.88	Yes-R	1.39	10.28	10.28
M0235	10N	1W	8	223.7	7.7	327.04	No	0.13	0.42	327.04
M0236	9N	2W	4/5/8/9	950.4	18.8	1,657.28	Yes-S	11.62		11.62
M0237	9N	2W	5/6	56.0	16.2	123.07	No	3.41	6.83	123.07
M0238	9N	2W	17	206.5	7.5	272.41	Yes-S	0.18		0.18
M0239	9N	2W	18	145.4	7.8	129.29	Yes-R	0.0	8.99	8.99
M0240	9N	2W/3W	7/12	498.2	13.6	815.29	Yes-R	13.55	73.13	73.13
M0241	9N/10N	2W	3/4/33/34	1,477.3	13.8	2,970.33	Yes-S	73.61		73.61
M0242	11N	1E	32/33	57.3	11.0	58.27	Yes-S	0.93		0.93
M0243	11N	1E	31	48.2	7.1	41.26	No	0.0	1.25	41.26
M0244	11N	1E/1W	13/24/19	405.2	6.7	235.17	No	0.0	3.77	235.17
M0245	11N	1E	20/21	79.1	7.6	79.81	No	0.13	6.74	79.81

Source: Moulton, 2002 fieldwork. Lake locations shown in Plan of Operations, Exhibit 9.

[a] MG = million gallons

[b] No = No fish caught; Yes = fish present or assumed present; S= Sensitive fish species; R = Resistant fish species

[c] Applicant requested withdrawal volume based on 15% winter volume deeper than 7 feet when sensitive species are present, 30% of winter volume deeper than 5 feet when only resistant fish are/are likely to be present; and unlimited volume when no fish are present.

[d] Lake meets criteria for Deep Water Lakes Fish Habitat LUEA.

CPAI requested a variance to withdraw up to 30 percent of the winter water volume deeper than five feet from three of those lakes where only resistant fish were present.[34] The State did not approve this request; therefore, this EA considers all water withdrawal from fish lakes will not be more than 15 percent of free water available under the ice, as specified in Stipulation 20.

2.1.2 Drilling Operations and Support

Drilling and testing operations are similar to those previously evaluated and incorporated by reference.[35] Wells drilled will be temporarily suspended or plugged and abandoned prior to spring breakup, according to BLM and AOGCC regulations. When operations are completed, the drill rig will be transported out of the project area, and areas of operation will be cleaned and inspected as necessary. Vibroseis trucks may collect data for vertical seismic profiles. For drilling multiple years, the rig may be stored over-summer at a site on the gravel road system, on an existing gravel pad in the NPR-A (e.g., Inigok), or on an insulated ice pad.[36]

Ancillary facilities include camps to support drilling and ice construction (. Communication towers guyed by concrete blocks (deadmen) may be erected at any pad (Plan of Operations, Exhibit 9). Other facilities include pump houses on water sources (lakes), light plants near pump houses and along ice roads, and a warm-up shelter near the airstrip, if needed. Up to 75,000 gallons of diesel fuel and 317,000 gallons of crude oil (for wells that are tested) will be held in lined, bermed storage areas on the drill pad. Up to 3,000 gallons of diesel fuel will be stored in tanks in secondary containment on remote camp pads, and up to 10,000 gallons of fuel may also be stored at an airstrip location.[37] Fuel will not be stored on lake ice. Refueling on frozen lakes (e.g., light plants) will follow CPAI's standard procedures for fuel transfer, as previously approved for other exploration programs in NPR-A.

2.1.3 Waste Management

Waste management procedures, described in CPAI's NPR-A waste management plan, will conform to local, state, and federal requirements. Wastes will be stored temporarily and hauled back to existing North Slope facilities for proper treatment and disposal, as previously evaluated and incorporated by reference. [38] Some rig camp facilities may incinerate burnable wastes. Domestic wastewater will either be processed and discharged under NPDES Permit, or hauled to an approved disposal facility. Drilling muds and cuttings will be temporarily stored on site, pending final disposal by annular injection or at an approved disposal facility. Crude oil from production testing will be held in contained tanks and then injected back into the formation or hauled out of the NPR-A for processing at an approved facility.

2.1.4 Air Emissions

CPAI will operate under the ADEC Air Permit by Rule (18 AAC 50.390 and 18 AAC 50.385, as applicable). CPAI will implement any public access control plan required, with entry by unauthorized personnel restricted, if required. In accordance with BLM Onshore Order No. 6 and APD Form 3160-3, CPAI evaluated the potential for hydrogen sulfide (H_2S) release and determined it is not expected at any proposed location. Measures and precautions associated with H_2S are addressed in the APD filed with BLM. Produced gas will be flared in accordance with ADEC air permit requirements.

2.1.5 Contingency Plans

Several contingency plans are required in support of proposed activities.

Oil Discharge Prevention and Contingency Plan (ODPCP)

The Applicant is required to have oil spill response measures in place to meet federal and state requirements. For BLM to approve a Permit to Drill, CPAI must meet federal regulations 43 CFR 3160 and lease stipulations (7-17) and comply with

[34] CPAI proposed additional water withdrawal from the three lakes where the only fish observed were ninespine stickleback. CPAI is requesting ADNR to revise its TWUP to authorize a 30 percent withdrawal from these lakes.

[35] EA: AK-020-00-011. Sections II.A.3 and II.A.4.

[36] EA: AK-023-03-027.

[37] Pers. Comm., Mark Major, CPAI. December 2002.

[38] EA: AK-023-01-003. Section II.A.5.

Onshore Order Nos. 1, 2, and 6. Prior to commencing operations, CPAI must have a site-specific ODPCP (Spill Plan) approved by ADEC, which is considered sufficient to meet BLM requirements, and is incorporated by reference.[39] Additionally, BLM inspects well plans and well construction prior to commencement of drilling.

The Applicant has an approved North Slope Exploration ODPCP covering prevention and response considerations for an area up to 90 miles from Kuparuk/Alpine. This Spill Plan is intended to support a regional, multi-year onshore oil and gas exploration program on the North Slope, including the NPR-A. The plan contains two distinct spill response scenarios that demonstrate regional response capability under different accessibility criteria and assumptions. The first scenario is an exploration well blowout 90 miles from infrastructure (approximately 120 miles via ice road). The second scenario involves response by aircraft, based on 90-mile travel distance and Rolligon support (based on 120-mile travel distance.

Under ADEC regulations (18 AAC 75.434), the worst-case response planning standard (RPS) is 5,500 barrels of oil per day. For a blowout lasting 15 days, the initial RPS volume would be 82,500 barrels, adjusted to 74,456 barrels based on prevention credits allowed by State regulation. Modeling indicates that 80 percent of the oil discharged would fall within 650 feet of the well; the remaining 20 percent would fall within 4,500 feet of the well. The blowout plume would lie along a NE-SW trending axis, potentially impacting sensitive areas. Kokoda 1 and 2 are in the Teshekpuk Lake Special Area/Watershed Land Use Emphasis Area (LUEA and within the boundary of the Deep Lakes Fish Habitat LUEA. Summit 2, Scout 1, Carbon 1, Powerline 1, and Grandview 2 are in sensitive consultation areas (Stipulation 62). A blowout plume extending 4,500 feet from Carbon 1 or Grandview 2 could affect Fish Creek or possibly tributaries/drainages to Judy Creek (Carbon 1). Other scenarios addressed in the ODPCP include fuel tanker spills and a well test flange leak.

The approved ODPCP, along with approved spill control equipment and supplies, will be kept on site at all times. A CPAI representative and a spill technician from Alaska Clean Seas (ACS) will be on site at each drilling location. Phone service will be available 24-hours a day at the drilling camp. When needed, CPAI will call on resources of other North Slope operators through ACS, Mutual Aid, spill response cooperatives, and contractors, as well as local Village Response Teams, as available.

For the proposed action, no drilling will begin until the well pad is accessible by ice road; the period of active drilling is subject to seasonal restrictions set in the ODPCP.

Spill Prevention Control and Countermeasures (SPCC) Plans

An SPCC Plan provides guidelines for pollution prevention and addresses secondary containment when total fuel storage at a site is greater than 1,320 gallons.[40] The drilling contractor will have an approved SPCC Plan for fuel storage facilities associated with drilling, and the well testing contractor will have an approved SPCC Plan for its testing tanks.

Wildlife Protection and Encounter Plans

CPAI has submitted a Polar Bear/Personnel Encounter Plan to the USFWS.[41] Measures in this plan also provide for the protection of other wildlife. Project personnel are instructed not to feed wildlife or attempt to attract, harass or hunt them at drill sites or along transportation routes.

2.1.6 Operations and Maintenance

The proposed schedule calls for mobilization and ice construction to begin as early as December 2003, with drilling from ice pads beginning as early as January 2004. Access to the drill rig and rig facilities will be restricted to authorized persons and regulatory personnel only. Operations and maintenance plans are similar to those previously evaluated and incorporated by reference.[42]

[39] CPAI Exploration ODPCP (Plan No. 024-CP-5096) is available at ADEC.

[40] 40 CFR 112. New regulations are being phased in that will affect future requirements.

[41] CPAI Polar Bear/Personnel Encounter Plan was submitted to USFWS on April 25, 2003.

[42] EA: AK-020-00-011. Section II.A.9.

A health, safety and environmental program will be implemented, including safety briefings, identification and correction of potential hazards, and environmental awareness. CPAI requires all North Slope employees and contractors to complete an 8-hour training program provided by the North Slope Training Cooperative (NSTC). CPAI also has an approved orientation program, which is required for all personnel working in the NPR-A. This training module includes awareness of NPR-A-related environmental, social, and cultural concerns.

2.1.7 Abandonment and Restoration

Upon completion of drilling operations, all equipment and supplies will be removed; ice pads will be cleared of equipment and ice surfaces cleaned. Road and pad sites will be inspected to ensure proper cleanup. Procedures will be similar to those previously evaluated and incorporated by reference. [43]

2.1.8 Community Relations

BLM and CPAI (formerly PAI and ARCO) have conducted a series of community meetings and consultations with residents of Nuiqsut, Barrow, Anaktuvuk Pass, Wainwright, and Atqasuk. The Applicant has also issued newsletters to keep local residents informed of planned activities and typically reviews proposed well sites, ice road routes, and stream crossings with Elders and other representatives from the NSB and local communities. CPAI hosts an internet website for posting permitting information.[44] CPAI has an ongoing program to address issues with the local communities, regulatory agencies, and special interest groups.

Cultural Resources

New road and pad locations avoid known archaeological and cultural resources and TLUS. An archaeological/cultural resources/TLUS clearance survey (Stipulations 64 and 74) was conducted for pad locations and along an approximately 1-mile-wide corridor represented by the new access routes shown in Figure 2**.** The routing shown is approximate, and may be altered in the field due to terrain, stream crossing conditions, or wildlife. No known long-term use cabins are located within 1,200 feet of project facilities. Native Allotments have been avoided by project siting.

Subsistence

The project area is recognized as a subsistence use area for Nuiqsut and Barrow, and many of the public meetings and consultations have included discussions on subsistence. The Applicant plans to continue consultation with subsistence users and implement mitigation measures of Stipulations 59 and 61. The Applicant has been accompanied during various field inspections by representatives from NSB, NPR-A SAP, and/or other community organizations and government agencies to identify and mitigate subsistence concerns.

Economic Opportunity

The CPAI employment process places a priority on local hire, and will ensure that NSB residents are provided with job opportunities. During the 2003-2008 winter exploration activities, CPAI may use local residents in a variety of roles, including: monitoring (e.g., subsistence); ice road construction and maintenance; village liaison; and project support and spill response.

2.2 POSSIBLE FUTURE ACTION

As noted in the IAP/EIS, exploration drilling is the only reliable method of verifying the presence of oil, and drilling may or may not result in discovery of potentially producible resources. If a discovery is made, it typically takes an additional 4 to 10 years for further study, design, and installation of facilities to begin production. Each phase of decision-making requires appropriate levels of environmental review and issuance of additional specific permits stipulating environmental protection and mitigation 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. However,

[43] EA: AK-020-00-011. Section II.A.10.
[44] http://www.conocophillipsalaska.com/permits/.

potential field development in and around the NPR- A has been discussed in previous evaluations, which are incorporated by reference.[45, 46] The area likely would be operated in a manner similar to existing North Slope operations (e.g., Alpine and Kuparuk), incorporating all relevant design and environmental protection measures required by the IAP/EIS and ROD with oil transported to the TAPS for ultimate delivery to domestic markets.

2.3 ALTERNATIVES

The IAP/EIS evaluated alternatives based on national economic security needs and broad environmental issues. As a result, the 1998 ROD includes 79 stipulations that substantially 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.[47, 48]

Alternatives to the proposed project are considered at several levels, as described below.

2.3.1 Alternatives Considered but Eliminated from Detailed Analysis

The IAP/EIS evaluated a fairly specific exploration model, developing extensive, site-specific stipulations for that concept. The 1998 ROD, and 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 (e.g., temporary roads constructed of materials other than ice) have been described in previous evaluations, which are incorporated by reference.[49]

For several proposed sites, one additional alternative was considered, but eliminated from detailed evaluation. This alternative involves drilling to different target locations from a single ice pad (i.e., directional drilling). From a proximity standpoint, this alternative could be feasible for drilling Summit and Scout wells from only one of the two pads. For most drill sites however, the distance separating targets is greater than the capability of the drilling rig planned for use – or exceeds the reach of available, reliable technology.

A more centrally located ice pad to consolidate Kokoda 1 and 2 (or Summit and Scout) was also considered, but not evaluated in detail. Both of these alternatives would place unnecessary constraints on delineating resources with no appreciable environmental advantage. In addition, extended reach drilling methods are rarely employed for exploration wells when practicable alternatives are available.

Drilling a vertical well provides far better exploration data than drilling a deviated well. In the proposed action, optional sidetrack wells will be drilled only after the main well is drilled vertically and geologic information is collected to guide the sidetrack or deviated well bore. Additionally, drilling up to 8 reservoir penetrations (maximum for two drill sites) would require at least 2 years of operation, which would require construction of 2 ice pads regardless of location. Also, the extent of commercial oil and gas prospects on CPAI leases cannot be determined if the applicant is not allowed to drill the minimum number of wells needed to define prospective oil and gas deposits. Accordingly, alternatives involving drilling at fewer sites or drilling fewer wells than applied for were considered but eliminated from further evaluation in this EA.

In summary, all but a few alternatives were eliminated because they do not meet the purpose of the proposed action, fail to reduce overall environmental impact or provide an environmental advantage, or are technically infeasible or unreliable.

[45] IAP/EIS. Section IV.A.

[46] EA: AK-020-00-011. Section II.B.

[47] IAP/EIS. Section II.C.1-6.

[48] See EA's cited in footnotes 4,6,8, and 10. Section II.C.

[49] EA: AK-020-00-011 and EA: AK-023-01-003. Section II.C.1.

2.3.2 Alternatives to the Proposed Action

Several options previously evaluated (i.e. constructed water sources and elimination of ice road offsets) are still under consideration for exploration, but have not yet been accepted by BLM. Based on limitations imposed by lease stipulations, only a few exploration alternatives warrant further consideration at this time: (1) primary access by packed snow trail, with air support; (2) primary access by air; and (3) no action.

Alternative 1 – Primary access by Packed Snow Trail with Air Support

Primary access by packed trail, with air support, described in previous evaluations (which are incorporated by reference [50]), is reconsidered in this EA. Local ice roads would likely be constructed to water sources to support ice pad and airstrip construction and maintenance. Personnel, equipment, supplies, and wastes would be transported via a hardened snow trail along any of the existing and authorized access routes.

Total water requirements would be reduced by approximately 83 MG with no major ice road construction. Emergency response would be by air or overland travel, using approved tundra travel vehicles throughout the entire drilling program. All other elements of design and operation would be essentially the same as the proposed action, including location of facilities, infrastructure, operations, spill response, and reclamation.

Alternative 2 – Access by Aircraft

Primary access by aircraft, described in a previous evaluation (incorporated by reference [51]), is reconsidered in this EA. Hercules-type aircraft would be required for transporting the drill rig, other heavy equipment, and facilities. Smaller aircraft support would also be required on a regular basis. All other elements of design and operation would be essentially the same as the proposed action. Only local ice roads and pads would be needed, with minor, local overland transport involved in initiating ice construction and support activities.

Air traffic to and from the site would be substantially increased over the proposed action. Without ice roads, water requirements (total for all needs) would be reduced by approximately 83 MG. Emergency response would be by air or overland with approved tundra travel vehicles (if needed) throughout the entire drilling program. Operations such as logistical support, spill response, and waste management would be more difficult and would increase air traffic. On occasion, air travel is not possible due to bad weather conditions that can persist for days. As a result, local storage needs would increase, and likely more pad area would be required.

Alternative 3 – No Action

Under the no-action alternative, exploratory drilling under CPAI's existing valid oil and gas lease would not be allowed. CPAI's permit applications to BLM would be denied, and no access, drilling, or drilling support activities would occur on federal lands in the NPR-A.

[50] EA: AK-020-00-011, EA: AK- 023-02-004, and EA: AK-023-02-005. Section II.C.2.

[51] EA: AK-023-01-001. Section II.C.2.

Figure 2 Drilling Locations with Access Routes

3 AFFECTED ENVIRONMENT

The proposed NPR-A exploratory drilling operations, new access corridors, and water supply lakes are all in the Northeast Planning Area. For a detailed discussion of the existing environment, see the IAP/EIS, which describes the general project area and its proximity to existing oil and gas fields on the North Slope, [52] which are shown on Figure 3. See also the six previous EAs prepared for exploration activity in the Northeast NPR-A Planning Area, all incorporated by reference. [53]

3.1 PHYSICAL CHARACTERISTICS

All proposed activities will take place on the Arctic Coastal Plain of the NPR-A, approximately 10-25 miles inland from the coast. Topography is generally flat to gently rolling, dominated by permafrost-related geomorphic features. These include polygonal patterned ground, shallow lakes, and extensive areas of wetland interlaced with small, meandering streams. Surficial deposits of the general area are marine silts, sands, and outwash gravels, with permafrost ranging from 650 to 1,330 feet deep. The active thaw layer is typically 1 to 2 feet deep.[54] Soils are typically wet throughout the area, although upland features such as pingos and some river benches and sand dunes are well-drained.

For eight months of the year, temperatures average below freezing, making ice construction a feasible alternative to gravel road/pad construction. During the other four months, there is a dramatic change including higher temperatures (over 60° F) and periods of long daylight. Annual precipitation is low (typically <10 inches), with more than half falling as snow. Snow cover is typically established in late September-early October; seasonal snow cover disappears from late May - mid June. Prevailing winds blow cold air from the largely frozen Arctic Ocean. Recently, changes in weather patterns have reduced the winter exploration season from 208 days (1970) to 103 days (2002).[55]

The Kokoda ice drill pad locations are more westerly than most of the exploration drilling programs previously assessed in the Northeast Planning area (only Puviaq is further west). In *the Exploratory Soil Survey of Alaska* (Rieger, Schoephorster, and Furbush, 1970), soils of the eastern part of the Northeast Planning Area were classified differently than soils of the western part of the planning area.

According to Rieger et al, soils in the eastern part of the planning area tend to be more shallow over permafrost and constantly wet, with many small thaw lakes, low terraces, broad shallow, depressions and alluvial floodplains. The loamy, poorly drained soils have a thick cover of sedge tussocks, low shrubs, forbs, mosses and lichens. Very poorly drained fibrous peat soils occupy depressions, shallow drainage ways, and lake borders commonly under a thick cover of sedges. The western part of the planning area is dominated by nearly level, low tundra dotted with shallow thaw lakes. There are many undulating sand dunes; most are stabilized by vegetation, but some adjacent to streams are still active. Most of the soils in this part are sandy eolian, alluvial, and marine deposits with a few forming in loamy sediment. The soils are poorly- drained with a shallow permafrost table in level areas and areas between sand dunes. Dune soils consist of eolian sand, and although they are perennially frozen below a depth of 30 to 40 inches, they typically do not retain enough moisture for large ice crystals to form.

New access routes cross unnamed tributaries and channels of the Kalikpik River and Fish Creek, and several unnamed streams. All authorized stream crossings, including those authorized in previous years, may continue to be used during the proposed five-year exploration program. Several elements of the proposed project are located in water-related special areas: Teshekpuk Lake Watershed LUEA and Fish Habitat LUEA (i.e., along Fish Creek as well as in the deep water lakes area).

CPAI has identified twelve lakes for water withdrawal, as depicted in Plan of Operations,

[52] IAP/EIS. pp. III-A-1 through III-A-60; III-B-1 through III-B-633; and III-C-1 through III-C-66.

[53] See footnotes 4, 6, 8, 10, 12, 14 and 16. EA Section 3/III.

[54] USDOI BLM. EA: AK-023-02-033. p. 5.

[55] G. Schultz, ADNR. 2003 Tundra Access Symposium, sponsored by AOGA, ADNR, and BLM. October 7, 2003.

Exhibit 9. The volume to be withdrawn depends on depth and habitat value for fish (shown on Table 4). Ice aggregate may be removed from grounded ice on any approved lake.

Water quality data from potential water supply lakes are within the general ranges of water quality data discussed in the IAP/EIS and reviewed by BLM in previous analyses. In all lakes, ions are excluded from water as it freezes, concentrating solutes in free water below the ice.

3.2 BIOLOGICAL RESOURCES

Biological resources for the seven drilling sites and optional access routes within the NPR-A are described in the IAP/EIS.[56] Biological resources have also been described in previous BLM assessment documents, incorporated by reference. [57]

3.1.1 Vegetation

The project area is located in the Arctic Coastal Plain, which is generally characterized as a mosaic of tundra wetlands with low relief. However, even small-scale relief features can influence vegetation patterns. Nowacki et al.[58] describe the dominant vegetation on the Arctic Coastal Plain as wet sedge tundra in drained lake basins, swales and floodplains; tussock tundra and sedge-*Dryas* tundra on gentle slopes; and low willow thickets on well-drained riverbanks.

Land cover in the Northeast NPR-A Planning Area has been mapped by BLM in cooperation with Ducks Unlimited, NSB, and USFWS. Land cover is classified into 17 cover types, shown below with the percent cover in the Northeast Planning Area:[59]

WATER:

1. Ice (2.2%)
2. Clear Water (10.8 %)
3. Turbid Water (8.4%)

AQUATIC

4. *Carex Aquatilis* (3.8%)
5. *Arctohylla fulva* (0.4%)

FLOODED TUNDRA

6. Flooded Tundra LCP (6.5%) (LCP =low centered polygons)
7. Flooded Tundra NP (2.7%) (NP=non patterned)

WET TUNDRA

8. Wet Tundra (5%)

MOST TUNDRA

9. Sedge Meadow (10.1%)
10. Tussock Tundra (29.1%)
11. Moss Lichen (1.6%)

SHRUB

12. Dwarf Shrub (15.5%)
13. Low Shrub (1.7%)
14. Tall Shrub (0.1%)

BARREN GROUND

15. Sparsely Vegetated (0.5%)
16. Dunes/Dry Sand (0.7%)
17. Barren Ground/Other (e.g., clouds) (1%)

Based on this inventory, approximately 21 percent of the Planning Area is open water, and almost another 18 percent is standing water with varying extent of vegetation cover. Cotton grass (common to tussock tundra and dwarf shrub) is the most commonly occurring plant type, covering about 44 percent of the Planning Area.

For comparative purposes, drill site locations and access routes were superimposed on the digitized land cover map, and associated land cover types were estimated. Affected acreage reflects a pad size of 500 by 500 feet and approximately 62 miles of ice road constructed within a mile-wide corridor (plus approximately 10 percent overlap associated with analyzing corridors by segment). Results are provided in Tables 5 and 6.

It is important to note that data shown in Table 6 reflect 1-mile wide transportation routes. The actual ice road will be only 35-feet wide, located within that corridor, affecting less than one percent of the total acreage.

[56] IAP/EIS. pp. III-B-1 through III-B-53.

[57] See EAs cited in footnotes 4, 6, 8, 10, 12, 14, 16, and 20. Section III.B/3.B.

[58] Nowacki, G. P. Spencer, M. Fleming, T. Brock, and T. Jorgenson. Unified Ecoregions of Alaska, 2001. USGS Open File Report 02-297, p. (1sheet). 2002.

[59] IAP/EIS Table III.B.2-1.

Table 5. Ground Cover at Well Pad Sites

Well Pads (500 x 500 feet)			
Well site	**Land Cover**	**Area (acres)**	**% Cover**
Carbon 1	Flooded Tundra LCP	1.31	22.8
	Flooded Tundra NP	0.12	2.1
	Wet Tundra	1.29	22.5
	Sedge Meadow	2.59	45.3
	Tussock Tundra	0.42	7.3
	TOTAL	5.73	100.0
Grandview 2	Flooded Tundra LCP	0.09	1.5
	Sedge Meadow	2.05	35.7
	Tussock Tundra	3.60	62.8
	TOTAL	5.73	100.0
Kokoda 1	Flooded Tundra LCP	0.22	3.9
	Wet Tundra	0.52	9.1
	Sedge Meadow	2.74	47.8
	Tussock Tundra	2.25	39.3
	TOTAL	**5.73**	**100.0**
Kokoda 2	*Carex Aquatilis*	0.11	1.9
	Wet Tundra	0.48	8.4
	Sedge Meadow	2.93	51.1
	Tussock Tundra	2.21	38.6
	Dwarf Shrub	0.00	0.0
	TOTAL	5.73	100.0
Powerline 1	Wet Tundra	0.03	0.6
	Sedge Meadow	2.54	44.4
	Tussock Tundra	3.15	55.0
	Dwarf Shrub	0.00	0.1
	TOTAL	5.73	100.0
Scout 1	Turbid Water	0.18	3.2
	Carex Aquatilis	1.24	21.6
	Flooded Tundra LCP	2.26	39.4
	Flooded Tundra NP	0.12	2.2
	Wet Tundra	0.22	3.9
	Sedge Meadow	1.14	19.9
	Tussock Tundra	0.57	9.9
	TOTAL	5.73	100.0
Summit 2	Wet Tundra	0.40	6.9
	Sedge Meadow	4.12	71.9
	Tussock Tundra	1.21	21.2
	TOTAL	5.73	100.0

Table 6. Ground Cover Along Access Routes

Potential Access Routes (1-mile wide corridor)

(35-ft wide ice road will be located within mile-wide corridor, depending on site-specific conditions)

Segment 1: Kokoda 1 to Point North of Kokoda 2
Length: 3.64 miles

Vegetation Type	**Area (acres)**	**% Cover**
Clear Water	261.37	9.3
Turbid Water	344.50	12.2
Carex Aquatilis	154.66	5.5
Arctophila Fulva	7.74	0.3
Flooded Tundra LCP	94.58	3.4
Flooded Tundra NP	130.64	4.6
Wet Tundra	186.36	6.6
Sedge Meadow	1,127.60	40.0
Tussock Tundra	421.85	15.0
Moss / Lichen	8.18	0.3
Dwarf Shrub	37.38	1.3
Low Shrub	37.59	1.3
Sparse Vegetation	3.11	0.1
Barren Ground/Other	4.21	0.1
TOTAL	2,820	100

Segment 2: Alternate Route Around Kokoda 2
Length: 1.83 miles

Vegetation Type	**Area (acres)**	**% Cover**
Clear Water	155.46	9.3
Turbid Water	192.85	11.6
Carex Aquatilis	98.50	5.9
Arctophila Fulva	6.94	0.4
Flooded Tundra LCP	63.07	3.8
Flooded Tundra NP	74.95	4.5
Wet Tundra	108.52	6.5
Sedge Meadow	666.28	40.0
Tussock Tundra	268.31	16.1
Moss / Lichen	5.33	0.3
Dwarf Shrub	17.04	1.0
Low Shrub	6.55	0.4
Sparse Vegetation	0.67	0.0
Barren Ground/Other	1.47	0.1
TOTAL	1,666	100

Table 6, continued

Segment 3: North of Kokoda 2 East to Powerline Route
Length: 19.08 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	1,443.39	12.4
Turbid Water	1,138.82	9.8
Carex Aquatilis	465.84	4.0
Arctophila Fulva	10.65	0.1
Flooded Tundra LCP	586.54	5.0
Flooded Tundra NP	281.02	2.4
Wet Tundra	665.09	5.7
Sedge Meadow	3,599.62	30.9
Tussock Tundra	2,899.60	24.9
Moss / Lichen	124.18	1.1
Dwarf Shrub	185.99	1.6
Low Shrub	0.67	0.0
Dunes/Dry Sand	49.11	0.4
Sparse Vegetation	70.23	0.6
Barren Ground/Other	116.69	1.0
TOTAL	11,637	100

Segment 4: North/South Segment to Powerline 1
Length: 10.33 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	622.47	8.9
Turbid Water	477.52	6.8
Carex Aquatilis	308.54	4.4
Arctophila Fulva	9.38	0.1
Flooded Tundra LCP	544.12	7.7
Flooded Tundra NP	151.96	2.2
Wet Tundra	604.00	8.6
Sedge Meadow	1,660.29	23.6
Tussock Tundra	1,743.15	24.8
Moss / Lichen	155.31	2.2
Dwarf Shrub	157.42	2.2
Low Shrub	1.33	0.0
Dunes/Dry Sand	177.53	2.5
Sparse Vegetation	188.53	2.7
Barren Ground/Other	231.18	3.3
TOTAL	7,033	100

Segment 5 : South Route Away from Powerline 1
Length: 13.31 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	1,458.11	16.3
Turbid Water	286.64	3.2
Carex Aquatilis	469.40	5.3
Arctophila Fulva	12.87	0.1
Flooded Tundra LCP	788.89	8.8
Flooded Tundra NP	295.05	3.3
Wet Tundra	754.86	8.4
Sedge Meadow	2,227.39	24.9
Tussock Tundra	2,489.10	27.9
Moss / Lichen	33.17	0.4
Dwarf Shrub	105.92	1.2
Dunes/Dry Sand	0.03	0.0
Sparse Vegetation	3.11	0.0
Barren Ground/Other	12.48	0.1
TOTAL	8,937	100

Segment 6: Eastern Continuation of Segment 4
Length: 8.07 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	367.50	6.5
Turbid Water	202.48	3.6
Carex Aquatilis	217.16	3.9
Arctophila Fulva	9.61	0.2
Flooded Tundra LCP	313.58	5.6
Flooded Tundra NP	98.44	1.7
Wet Tundra	285.24	5.1
Sedge Meadow	1,386.08	24.6
Tussock Tundra	2,365.80	42.0
Moss / Lichen	47.14	0.8
Dwarf Shrub	138.33	2.5
Low Shrub	0.48	0.0
Dunes/Dry Sand	44.04	0.8
Sparse Vegetation	72.46	1.3
Barren Ground/Other	87.03	1.5
TOTAL	5,635	100

Segment 7 : Continuation of Segment 7 to Spark 5/8
Length: 2.27 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	117.83	6.2
Turbid Water	104.38	5.5
Carex Aquatilis	69.22	3.6
Arctophila Fulva	9.87	0.5
Flooded Tundra LCP	127.93	6.7
Flooded Tundra NP	41.27	2.2
Wet Tundra	221.64	11.6
Sedge Meadow	315.81	16.5
Tussock Tundra	691.11	36.1
Moss / Lichen	48.66	2.5
Dwarf Shrub	63.90	3.3
Low Shrub	0.67	0.0
Dunes/Dry Sand	30.32	1.6
Sparse Vegetation	29.11	1.5
Barren Ground/Other	41.06	2.1
TOTAL	1,913	100

Segment 8: Spur Road to Grandview 2
Length: 1.44 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	141.89	10.0
Turbid Water	38.33	2.7
Carex Aquatilis	31.79	2.2
Arctophila Fulva	6.01	0.4
Flooded Tundra LCP	126.84	8.9
Flooded Tundra NP	20.11	1.4
Wet Tundra	94.39	6.6
Sedge Meadow	396.51	27.9
Tussock Tundra	511.84	36.0
Moss / Lichen	8.90	0.6
Dwarf Shrub	35.17	2.5
Low Shrub	1.55	0.1
Dunes/Dry Sand	4.01	0.3
Sparse Vegetation	3.05	0.2
Barren Ground/Other	1.82	0.1
TOTAL	1,422	100

Table 6, continued

Segment 9 : Western Route to Summit 2
Length: 3.24 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	268.23	10.5
Turbid Water	108.56	4.2
Carex Aquatilis	74.61	2.9
Arctophila Fulva	8.85	0.3
Flooded Tundra LCP	148.89	5.8
Flooded Tundra NP	39.02	1.5
Wet Tundra	120.23	4.7
Sedge Meadow	645.29	25.2
Tussock Tundra	1,057.72	41.2
Moss / Lichen	4.89	0.2
Dwarf Shrub	56.78	2.2
Low Shrub	0.31	0.0
Dunes/Dry Sand	9.76	0.4
Sparse Vegetation	10.50	0.4
Barren Ground/Other	11.58	0.5
TOTAL	2,565	100

Segment 10 : From Spark 5/8 to Summit 2
Length: 3.38 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	57.85	2.2
Turbid Water	131.99	5.1
Carex Aquatilis	93.40	3.6
Arctophila Fulva	11.60	0.4
Flooded Tundra LCP	223.18	8.6
Flooded Tundra NP	60.80	2.3
Wet Tundra	305.20	11.8
Sedge Meadow	552.17	21.3
Tussock Tundra	876.69	33.8
Moss / Lichen	50.73	2.0
Dwarf Shrub	97.10	3.7
Low Shrub	3.06	0.1
Dunes/Dry Sand	39.24	1.5
Sparse Vegetation	48.58	1.9
Barren Ground/Other	45.78	1.8
TOTAL	2,597	100

Segment 11 - Summit 2 to Spark 4
Length: 3.80 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	226.27	7.7
Turbid Water	146.11	5.0
Carex Aquatilis	166.30	5.7
Arctophila Fulva	4.29	0.1
Flooded Tundra LCP	284.70	9.7
Flooded Tundra NP	93.44	3.2
Wet Tundra	230.96	7.9
Sedge Meadow	920.58	31.4
Tussock Tundra	806.93	27.6
Moss / Lichen	11.50	0.4
Dwarf Shrub	35.39	1.2
Sparse Vegetation	1.10	0.0
Barren Ground/Other	0.89	0.0
TOTAL	2,928	100

Segment 12 - Carbon 1 to Spark 4
Length: 3.4 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	330.45	12.4
Turbid Water	177.41	6.7
Carex Aquatilis	151.92	5.7
Arctophila Fulva	8.21	0.3
Flooded Tundra LCP	323.15	12.2
Flooded Tundra NP	96.40	3.6
Wet Tundra	284.04	10.7
Sedge Meadow	414.04	15.6
Tussock Tundra	699.72	26.3
Moss / Lichen	34.98	1.3
Dwarf Shrub	51.22	1.9
Low Shrub	0.89	0.0
Dunes/Dry Sand	26.90	1.0
Sparse Vegetation	24.13	0.9
Barren Ground/Other	32.16	1.2
TOTAL	2,656	100

Segment 13 - Spark 4 to Spark 1
Length: 5.08 miles

Vegetation Type	Area (acres)	% Cover
Clear Water	369.48	9.9
Turbid Water	196.13	5.3
Carex Aquatilis	232.51	6.2
Arctophila Fulva	7.91	0.2
Flooded Tundra LCP	453.85	12.2
Flooded Tundra NP	117.59	3.1
Wet Tundra	357.75	9.6
Sedge Meadow	394.67	10.6
Tussock Tundra	1,239.70	33.2
Moss / Lichen	99.48	2.7
Dwarf Shrub	100.45	2.7
Low Shrub	2.00	0.1
Dunes/Dry Sand	44.10	1.2
Sparse Vegetation	68.69	1.8
Barren Ground/Other	49.50	1.3
TOTAL	3,734	100

NOTES:

1- A typical 35-foot wide ice road would occupy less than 1 percent of the 1-mile wide corridor described in this table. Typically, lakes and rivers are avoided, as are taller shrubs.

2- Much of the dune/dry sand cover in the NPRA is found along lake beds and stream banks.

Several plant species are considered to be rare or sensitive within the Planning Area.[60] As used here, this classification can include species with small or declining populations or species for which there is little information or plant survey work. One such species (*Pleuropogon sabenei*, an aquatic grass) was reported to occur in the general vicinity of the Kokoda prospect. [61] Another (*Mertensia drummondii* , a bluebell) is known to occur on sand dunes along the Meade and Kogosukruk rivers. There are no threatened or endangered plants in the Planning Area.

3.1.2 Fish and Wildlife

Fish typically found in lakes include lake trout, arctic grayling, Alaska blackfish, northern pike, longnose sucker, whitefish spp., burbot, slimy sculpin, arctic lamprey, ninespine stickleback, and possibly threespine stickleback. Deep water lakes in the Pik Dunes area (deeper than 20 feet) may support lake trout at the northern limit of their habitat.[62]

The Applicant has proposed water withdrawal and/or ice harvesting from twelve lakes not previously permitted; the deepest is 18.8 feet. CPAI surveyed these lakes and found that seven lakes had fish, or were sufficiently deep to support overwintering fish; no fish were found in the other five lakes.

The proposed project crosses channels of Fish Creek, which are important for migrating, spawning and rearing anadromous fish and the Kalikpik River and other unnamed streams and tributaries, which support resident fish in the area of the proposed crossings. All new stream crossings must be approved by ADNR Office of Habitat Management and Permitting (OHMP).[63] No water will be withdrawn from rivers or streams.

No site-specific baseline studies for bird habitat were undertaken because the project is limited to winter months, when avian populations of special interest (e.g., eiders, other waterfowl, and shorebirds) are generally absent from the North Slope. The few birds that might be present during winter include owls, ravens, ptarmigan, and possibly gyrfalcon. Steller's eiders and spectacled eiders are listed under the Endangered Species Act. Neither species is known to be habitat-limited on the North Slope, has designated critical habitat on the North Slope, or is present during winter.

Wildlife that might be present during winter includes: Arctic fox, red fox, rodents, weasels, wolverine, over-wintering caribou, and possibly moose and musk ox. Caribou and polar bear are large mammals of special interest. Members of the Teshekpuk Lake Caribou Herd may be present in the project area during the winter. The calving area for this herd generally surrounds Teshekpuk Lake, north of the immediate project area. As early as late March, pregnant female caribou may begin the spring migration from overwintering areas to calving grounds; bulls and other females may remain on winter ranges until June. [64, 65] Actual timing of spring migration varies from year to year.

During winter, polar bears may be found near the proposed project area, primarily along the coast and down the Colville delta. Pregnant females come to shore in early winter to construct maternity dens. Polar bears commonly travel inland but don't usually go further than 20 or 30 miles. However, in recent years, there have been polar bear sightings up to 100 miles inland. Grizzly bears typically hibernate in dens throughout winter, although occasionally individuals could be encountered during early or late phases of project activity. Grizzlies tend to den in river and lake banks, sand dunes, pingos, and gullies.[66] No active bear dens are known to occur in the project area. The applicant consults with ADF&G and USFWS to stay updated on location of sightings and active dens.

[60] IAP/EIS. p. III-B-2.

[61] Mapped in North Slope Subarea Contingency Plan (Rare Plant Locations) and identified by Rob Lipkin, Alaska National Heritage Program. Pers. Comm. April 2003.

[62] Comments by Jack. Winters (ADF&G) at the TotalFinaElf NPR-A Exploration Pre-application meeting. April 24, 2003, and during Pers. Comm November 7, 2003

[63] Fish Habitat Permits FH03-III-0233/39. June 16, 2003

[64] IAP/EIS. p. III-B-41.

[65] IAP/EIS. Figure III.B.5.a-1. p. III-B-40.

[66] IAP/EIS. p. III-B-43.

3.3 SOCIOECONOMIC RESOURCES

Related socioeconomic resources are described in the IAP/EIS and in previous BLM assessments from which this EA is tiered and which are incorporated by reference. [67, 68, 69, 70] National security, land use, subsistence, cultural and historical resources; scenic resources and recreation, and wilderness are described below.

National energy needs and U.S. dependence on foreign oil are key issues in authorizing exploration. The increasing reliance on foreign-produced oil is a challenge to U.S. security. The proposed drilling sites are located in and near a region considered to have high oil potential. [71] Federal lands in these areas have been determined suitable for oil and gas activities, such as those proposed. [72]

The economies of the State and the NSB are heavily dependent on oil and gas revenues. Sources include lease bonuses and rentals, production royalties, corporate income taxes, NSB property taxes, and employment, as previously described and incorporated by reference. [73] On a statewide basis, the petroleum industry generates approximately 20 percent of all private sector payroll and 12 percent of all private sector jobs.[74]

The closest local community is Nuiqsut, although residents of both Nuiqsut and Barrow use the general project area for subsistence.[75] Nuiqsut has about 400-450 residents, with a substantial subsistence economy, supplemented by employment in local construction and nearby energy production jobs. Barrow, a community of about 4,500 is a regional center and the seat of local government, also supporting a subsistence economy. Primary subsistence resources used by both communities include caribou, moose, birds, and fish.

The Applicant has located project elements to avoid impacting subsistence activities, cultural resources, and historic/prehistoric sites. CPAI and BLM have consulted with local residents, the NSB, the Inupiat Community of the Arctic Slope (ICAS), the Kuukpik Subsistence Oversight Panel (KSOP), and the NPR-A SAP to ensure that the proposed project does not unreasonably restrict access to subsistence resources and protects cultural and historical sites. Site investigations by professional archaeologists and coordination with the BLM and NSB have identified archaeological sites in the area, but the proposed facility/access locations appear to be sufficiently offset to avoid impacts.

The project area has little visual variety, contrast and harmony.[76] The area is not associated with a designated Wilderness Area or a designated Wilderness Study Area. In addition to Fish and Judy creeks discussed previously, the Kalikpik River was considered for eligibility as a Wild and Scenic River, but had no outstandingly remarkable values and was determined to be not eligible.[77]

The project area is flat, wet, and remote, with only a few private cabins and former drill sites. There are no known commercial recreation businesses and no developed commercial or public recreation facilities. There is a limited opportunity for primitive recreation; however, the expense and demands of travel to the area result in very little recreational use. Extremely limited to no winter recreational use by other than local residents is documented or expected, due to harsh weather, limited daylight, and easier access to more scenic areas. Cabins are sometimes accessed by snowmobile. For the most part, however, cabins, campsites, and lakes are largely inaccessible until late summer when wheeled vehicles, boats, and light aircraft are used for access. Inland waterbodies also tend to be shallow and isolated, which is not conducive to recreational boating.

[67] IAP/EIS. pp. III-C-1 through III-C-61.

[68] EA: AK-020-00-011. pp. III-5 to III-7

[69] EA: AK-023-01-003. pp. III-6 to III-7.

[70] EA: AK-023-02-005. pp. III-5 through III-8.

[71] IAP/EIS. Figure III.A.1.a(3)-11. p. III-A-29.

[72] IAP/EIS ROD. 1998.

[73] EA: AK-023-02-005, pp. III-6 and III-7.

[74] McDowell Group. Economic Impact of the Oil and Gas Industry in Alaska. January 15, 2001.

[75] IAP/EIS. Figure III.C.3-1. p. III-C-8.

[76] IAP/EIS. p. III-C-55.

[77] IAP/EIS. Table III.C.6-1. p III-C-53.

Figure 3 North Slope Oil and Gas Fields

4 ENVIRONMENTAL IMPACTS

The proposed project would be the seventh winter exploration drilling program under the 1998 IAP/EIS and ROD issued by the Secretary of the Interior. If authorized, it would be the fifth winter exploration program in NPR-A by the Applicant.

All authorized winter exploration drilling programs have used similar technologies and equipment operating in similar habitats. All were approved and monitored on the basis of full implementation of all relevant stipulations contained in the 1998 ROD as well as state and local permits and compliance with the enforceable standards of the approved NSB Coastal Management Program (CMP). Table 7 summarizes and compares exploration programs on federal land within NPR-A since 1999.

To date, authorizations to conduct winter exploration for oil and gas resources in the NPR-A Northeast Planning Area have resulted in no long-term significant impacts to the environment or restricted access to or use of subsistence resources. The 79 stipulations in the ROD provide for environmental protection within the Northeast Planning Area.

The ROD found that requested exceptions to stipulations could be granted under a set of strict conditions. This option allows the AO to consider technical and economic feasibility and potential environmental advantages of alternatives, as long as the alternative fully satisfy objectives of the stipulation. In making an exception, the AO shall consult with appropriate regulatory and resource agencies.[78] The proposed exploration program:

- Incorporates all relevant decisions made in the IAP/EIS and ROD.
- Comprises the general scope of exploration activities evaluated in the IAP/EIS.
- Reflects the experience gained during similar operations in the NPR-A and along the North Slope on lands managed by the State of Alaska.

[78] 1998 ROD. p 7.

4.1 ASSUMPTIONS

Assumptions of this EA have been considered and discussed in Section IV.B of EA: AK-023-01-003, which is incorporated by reference.

Assumption 1: When applied to the proposed action, management decisions and stipulations of the 1998 ROD provide significant protections to non-oil and gas surface resources and human uses in the NPR-A.

Assumption 2: Of the 16 designated LUEAs and Special Areas, only portions of three are directly or indirectly involved in the proposed action. Approved technologies and permit stipulations avoid significant adverse impacts.

Assumption 3: The proposed action has no significant potential to adversely impact the marine environment.

4.2 CRITICAL ELEMENTS

BLM guidelines for environmental assessment include "Critical Elements" to consider in evaluating project impacts. The EA is not limited to only those strictly described elements and will address other elements specific to the proposed action, as shown in Table 8 and incorporated in the discussion of project-specific impacts.

4.3 ENVIRONMENTAL CONSEQUENCES

The proposed action is built on experience gained from decades of similar operations on the North Slope, including six recent exploration programs in the Northeast Planning Area. This EA is tiered to the 1998 IAP/EIS, portions of the 2003 Northwest Planning Area Draft IAP EIS, and previous EA's that focus on issues and potential impacts related to the proposed project.

4.3.1 Project-Specific Impacts

This analysis is based on potential direct and indirect impacts associated with affected critical elements and other issues of concern specific to the proposed project, as defined and discussed in the following text. Stipulations that eliminate, reduce, or otherwise mitigate related impacts are cited in each analysis. Where applicable, the analyses tier to and incorporate by reference related NEPA documents available through the BLM Northern Field Office in Fairbanks, Alaska.

Table 7. 1999-2003 Exploration Activity on Federal Land in the NPR-A

TOTAL for 4 Exploration Seasons		Evaluated/Authorized Activity	Actual Activity
Ice drill pads	number	45/13	13
Ice storage pad (over-summer)	number	2/2	1
Ice road (in NPR-A) [a]	miles	284/284	145
Packed trail ROW in NPR-A [b]	miles	410/410	372
Wells	maximum number	117/14	14
Ice airstrip	number	10/10	4
Water supply lakes [c, d, e]	number	240/240	71
Water use [f]	MG	1,655/1,655	245

Values estimated for comparative purposes (except number of pads and wells)

a – Maximum authorized in any one year of the total program proposed

b – Includes trail for construction of Puviaq ice storage pad in 2002 and pre-approved for Total E&P in 2003.

c – Lakes on federally-owned land within NPR-A.

d – Includes lakes authorized for ice aggregate removal.

e – Includes, but does not duplicate, lakes authorized for more than one user.

f – Does not include separate volume for ice aggregate withdrawal.

Table 8. Elements of this Environmental Assessment

Critical Element	May Be Affected	Can Be Mitigated
1. Air Quality	Yes	Yes
2. Areas of Critical Environmental Concern	None	NA
3. Cultural Resources	Yes	Yes
4. Farmland, Prime or Unique	None	NA
5. Flood Plains	Yes	Yes
6. Invasive/Non-Native Plants	NA	NA
7. Native American Religious Concerns	Yes	Yes
8. Threatened or Endangered Species	Not Expected	Yes
9. Waste, Hazardous or Solid	Yes	Yes
10. Water Quality	Yes	Yes
11. Wetlands / Riparian Zones	Yes	Yes
12. Wild and Scenic Rivers	None	NA
13. Designated Wilderness Areas	None	NA
14. Environmental Justice	No	NA
Other Important Elements		
Adverse Energy Impact	No	NA
Wildlife	Yes	Yes
Fisheries	Yes	Yes
Local Land Use and Subsistence	Yes	Yes

NA – Not applicable to the proposed action.

None – Element not present in project area; therefore, no related impacts will result from proposed action.

Project-specific issues discussed in this section have been grouped as follows:

- Air Quality
- Hazardous Materials, Solid Wastes, and Spills
- Cultural and Paleontological Resources
- Disturbance to Floodplains, Wetlands, Riparian Zones and Vegetation
- Threatened and Endangered Species, Polar Bears, and other Sensitive wildlife
- Water Resources and Potential Impacts to Water Quality, Fish, and Waterfowl
- Local Land Use and Subsistence
- Scenery/Wilderness/Primitive Recreation Opportunities
- Environmental Justice
- Adverse Energy Impacts

Air Quality

Related Stipulations: Managed under state and federal regulations

Discussion Incorporated by Reference: The 1998 ROD has no specific stipulations relating to air quality, which is regulated by the State and EPA. ADEC is responsible for enforcing state and national regulations controlling air quality statewide, including the NPR-A. It is expected that any emissions generated by the proposed action under an approved ADEC air quality permit will not cause a significant deterioration of air quality. Previous discussion on air quality issues and potential impacts was presented in Section IV.D.1 of EA: 023-01-003 (p. IV-15 and IV-16).

Analysis of Proposed Action: CPAI will operate under statewide "Permits by Rule", which limit conditions and duration of drilling, and if needed, address emissions from certain fuel storage tanks. A surveillance program is not required when the sulfur content of fuel combusted is <0.19 percent. If needed, an exclusion zone to restrict access of unauthorized personnel has been allowed by both ADEC and the EPA in other North Slope exploration permits, and accepted by BLM for previous exploration drilling and well testing in the NPR-A. Additionally, the NPR-A is "reserved" from public lands and public access is already controlled.

Proposed drilling operations are temporary and restricted to the winter season when plants are dormant and snow-covered and surface water is frozen. There are no recreation facilities or documented winter recreation activities that would attract people to the area. Impacts to wildlife in an exclusion zone would be short-term, temporary, and have no expected consequence. Impacts to visibility, if any, are also expected to be minor and temporary. No long-term or significant effects on air quality are expected.

Hazardous Materials, Solid Wastes, and Spills

Related Stipulations: 1-12, 14-17, 28, 58, 63, 65, 70, 71

Discussion Incorporated by Reference: The extent of environmental impacts from accidental release would depend on the type of materials spilled; size and location of the spill; underlying substrate; effectiveness of response; and site rehabilitation success. The tundra and all waterbody surfaces should be frozen throughout the proposed action, with spills typically restricted to the ice surface, where they can be effectively cleaned up. Potential impacts from spills are discussed in the IAP/EIS (p. IV.A.33 through IV.A.41) and in Sections IV.D.1 of EA: AK-020-00-011 and EA: AK-023-01-003, all of which are incorporated herein by reference.

Analysis of Proposed Action: The proposed action is very similar to previously approved exploration programs in the NPR-A. Stipulations 1- 9 require the applicant to have a Waste Management Plan and Hazardous Materials Emergency Contingency Plan, as well as specialized training and procedures for waste management. CPAI has an ODPCP approved by ADEC, demonstrating the capability to control, contain and cleanup any expected release. SPCC Plans are required for well drilling and testing contractors, under EPA regulations. The approved ODPCP and SPCC Plans will be accepted by BLM as meeting the lease stipulation for spill planning. CPAI will comply with all stipulations for fuel and chemical transportation and storage using a combination of existing plans and approvals for spill response, waste handling, tracking, and disposal on the North Slope.

No fuels will be stored on waterbodies, and on-site storage will have secondary containment. Fuel-powered equipment will have appropriate environmental protection in place (e.g., secondary containment, hard-mounted drip pans). Wastes will be transported out of the NPR-A for disposal at permitted facilities. Ice road monitors are assigned to keep ice roads and pads clean. Spills will be promptly reported and cleaned up. The Subsistence Report notes no major spill-related issues during the 2002-2003 drilling season. [79]

Both drill sites and associated activities are within or adjacent to sensitive areas such as several Fish Habitat LUEAs. Protective environmental stipulations require exploratory drilling to be done in the winter when waterbodies are frozen and the ground is snow-covered, substantially limiting the potential for impacts from a spill. Spilled product thawing through the ice/snow and or cleanup procedures could also result in impacts to tundra, water quality, or aquatic habitat. Tundra impacts might include soil contamination, vegetation damage, wildlife injury, or surface disturbance (e.g., traffic, excavation). Lake impacts would likely persist longer than stream impacts.

The greatest potential threat to Fish Habitat LUEAs would be from a blowout that continued into breakup. The ODPCP limits the drilling period to better ensure that spill cleanup activities are largely confined to winter conditions. Based on North Slope records and current drilling technology, a blowout is considered a very low probability event.

Cultural and Paleontological Resources

Related Stipulations: 1, 24h-j, 26, 27, 62d, 62e, 62h, 63-65, 67, 74

Discussion Incorporated by Reference:
Considerable discussion on this subject is included in the IAP/EIS (Section IV.G). The IAP/EIS concluded that during winter when activities took place and the ground was frozen and there were no surface disturbing activities and subsurface cultural resources were "usually safe from disturbance." However, there is "somewhat greater risk" of damage to cultural resources on the surface if there is inadequate snow cover. Paleontological resources, usually protected by deep burial in permafrost, would also be protected by adequate snow cover.

Analysis of Proposed Action: Cultural surveys (air and ground) at proposed drill sites, and along ice road and snow trail corridors were completed by a qualified professional archaeologist, who also notes paleontological resources. Findings have been submitted to the SHPO, NSB, and BLM, but based on their sensitivity, no specific identification of cultural/historic resources is included in this EA.

Results of cultural resources surveys and the proposed use of ice construction and low surface impact ATVs support the conclusion that undiscovered cultural and paleontological resources have been provided adequate protection, and that no adverse impacts are expected from the proposed action. The proposed action fully complies with requirements of the NHPA of 1966.

Disturbance to Floodplains, Wetlands, Riparian Zones, and Vegetation

Related Stipulations: 1, 3-5, 7-12, 14-16, 18-22, 24c-n, 27, 28, 62a-e,h, 63, 65, 67, 70

Discussion Incorporated by Reference: The 1998 IAP/EIS describes reasonably-expected ground disturbance from overland winter travel, ice roads, ice pads, and well cellars as minor and often temporary, and this discussion is incorporated by reference. [80] The 2003 Draft Northwest Planning Area IAP/EIS also includes similar discussion of potential ground disturbance from exploration activities, including multiple year ice pads, incorporating results and observations from the past four years of exploration in the Northeast Planning Area. [81]

The 1998 ROD prohibits construction of permanent facilities, material excavation, and use of gravel for oil and gas exploration. Compliance with EO 11988 and EO 11990 are discussed in EA: AK-020-00-011 (pp. V-14 through IV-16), which is incorporated herein by reference and summarized below.

[79] May 2003 Subsistence Report, 2003-2003 NPR-A Exploration, ConocoPhillips Alaska, Inc.

[80] IAP/EIS. pp. IV-G-16 through 18.

[81] Northwest NPR-A Draft IAP/EIS. pp. IV-12 through IV-17.

Analysis of Proposed Action: The only direct surface-disturbing activity expected is *de minimis* acreage lost to the construction of well cellars. Ice roads and ice pads may occupy up to 440 acres of federal land (310 acres for drill sites and ice roads with up to an additional 90 acres for construction pads and 40 acres for airstrips over the five year project term). Active operations will occur only during winter, when soils, wetlands, and riparian habitat are frozen. The AO will determine when there is adequate snow cover and frost penetration for winter activity. In general, ice pads and roads create few lasting impacts to tundra vegetation while minimizing potential impacts from exploration activity and spills. There could be some accidental crushing and scraping of the tundra surface during ice road/pad construction. Vegetation may be matted, bent, broken or removed. Compaction of the surface can alter drainage and thermal regime, depending on location and extent.

Unlike permanent roads, single season ice structures do not physically change the ground surface, although there may be minor, temporary alteration of surface vegetation (e.g., compression, greening or browning) with significant recovery expected within a few years. There may also be differences in the mean active layer depth under ice roads constructed under different conditions. Due to the importance of ice construction to North Slope exploration, both agencies and operators are studying impacts of winter tundra travel.

The existing standards have been in place for decades to protect surface vegetation and minimize soil compression caused by exploration traffic. Improvements in low ground pressure vehicles (e.g., Rolligons) and improved ice construction methods (e.g., pre-packing) warrant a reconsideration of associated tundra impacts. Although only a few years of observations and data have been collected, several recent studies are summarized below for consideration in this impact analysis.

When CPAI began considering the need for early entry into NPR-A, BLM suggested applying cone penetrometer testing to the frozen ground surface. This approach is a standard engineering test used for gravel and paved road construction strength measurement.

Last winter, CPAI demonstrated the protective effectiveness of using load-bearing capacity of the frozen tundra as the standard for ice road construction (vs. depth of frost), measured with a plate indentation test and cone penetrometer. Based on this method, a test section of ice road was constructed approximately one month before general winter tundra travel opened on State land. Neither ADNR nor CPAI found any major differences in any variables between the demonstration ice road and a comparable segment of standard ice road. The few differences noted were slightly deeper active layer under the demonstration road in moist sedge dwarf shrub tundra, and a higher level of tussock disturbance under the demonstration ice road in tussock tundra. [82, 83] The ecological significance of these findings will be the subject of future studies.

The ADNR, U.S. Department of Energy (DOE), and various other participants (e.g., U.S. Army Corps of Engineers Cold Regions Research & Engineering Laboratory, Yale University, and local operators) are continuing efforts to develop scientifically-based methods for determining conditions under which the tundra would be sufficiently resistant to disturbance from ice road construction. This team is supporting additional studies and modeling to better understand how contributing factors (e.g., snow depth and density, ground hardness, vegetation and soil types) interact in protecting against tundra impacts. Results are expected in late 2004. [84]

Other studies by ADNR include tundra travel tests of different vehicle classes, beginning in November 2003. ADNR is also encouraging North Slope operators to pre-pack ice road routes prior to the general opening of tundra travel. For the past few years, ADNR has allowed companies to use summer approved ATVs to remove the insulating snow layer along the route (e.g., packing, watering). Reducing insulation promotes the drive-down of frost, resulting in earlier compliance with standard

[82] L. Byrne and Gary Schultz, ADNR. 2003 Tundra Access Symposium.

[83] M. Stahl, CPAI. 2003 Tundra Access Symposium.

[84] DOE News: www.fossil.energy.gov/news/techlines/03/tl_arctictundramodel.html

requirements (i.e., 12-inches of ground frost), and earlier authorization for ice road construction.[85]

On October 30, 2003, ADNR authorized CPAI to pre-pack the ice-road route along state lands to the NPR-A this winter.[86] The NSB has also authorized CPAI to pre-pack the ice road to expedite the penetration of frost.[87]

Multi-season ice structures may have more severe and longer-term impacts on the tundra. A recent site inspection by BLM at the Puviaq over-summering ice pad noted that a large percent of the underlying tundra failed to green-up during the first growing season after ice melt. While most of the area appeared brown, re-sprouting was observed on the tops of some tussocks and at the base of many of the willow and birch stems. The area surrounding the pad also exhibited tussock damage (e.g., shearing, scuffing and crushing) believed to be the result of construction activity, but overall disturbance was considerably less than under the pad.[88] There may be minor incidence of vegetation dying along the perimeter of a melting ice pad if tarp cover remains after the soil thaws. [89]

No new packed snow trail routes are proposed; however, previously approved routes may continue to be used over the 5-year span of this project. Impact to wetlands and riparian vegetation, and underlying soils due to travel via packed trail will vary according to the type and number of vehicle trips and vehicle loading, as well as soil type, ground cover, and snow conditions. Where snow cover is too thin, variable disturbance to tundra vegetation and the soil thermal regime may occur. Improved trail packing techniques and use of low ground pressure vehicles have resulted in fewer impacts; however there still may be site-specific impacts along multiple trails per season. Impacts will vary based on vegetation type, vehicle type and loading, and volume and timing of traffic.

As part of a long-term study on the surface effects, BLM has established new study plots in each of the past three years. Other agencies and operators have sponsored similar investigations. Although only a few years of observations and data have been collected, findings are summarized below for consideration in this impact analysis.

In early 2002, overland trails were used to transport drilling equipment for two programs, each involving hundreds of vehicle trips. ABR, Inc. looked at the effects of Rolligons hauling drilling equipment the full 131 miles from Kuparuk to the Puviaq drill site (January - April 2002). Over 400 passes were made with up to 20 vehicles in a group, typically traveling by single lane. Disturbance was ranked as negligible to low on 77 percent of the trail. The high level disturbance (5 percent) occurred in low willow shrub and dwarf shrub tundra, and very high level disturbances (3 percent) occurred only in dwarf shrub tundra.

It was speculated that dwarf shrub tundra along the route may be sensitive to disturbance because: (1) the canopy tends to be vertical, (2) the predominantly woody vegetation tends to be brittle at low temperatures, (3) the association tends to occur on wind swept ridges (inactive dunes) where snow cover is presumably thin, and (4) underlying soils tend to be well drained with a thin surface organic horizon, making them highly susceptible to scuffing. Track depression was also the highest in dwarf shrub tundra, presumably because the Rolligon wheels generate more torque on steeper slopes, there was less snow cover, and there was less ice bonding in the drier soils.[90]

A study of tundra disturbance by winter seismic camp moves in ANWR found similar levels of disturbance in similar types of vegetation. After eight to nine years of recovery, disturbance was estimated at none to low on 95 percent, medium on 4 percent, and high on 1 percent.[91] Taking into consideration the differences in the two studies (e.g., level of traffic, topography), it is not unreasonable to suggest that newer travel practices (e.g., protective stipulations, use of Rolligons) result

[85] Pers. Comm. L. Lynch, ADNR. September 15, 2003.

[86] G. Schultz, ADNR e-mail to M. Stahl, CPAI. October 30, 2003.

[87] NSB Permit No. 03-160/167. June 26, 2003.

[88] J. Kidd, ABR, Memorandum to C. Rea, CPAI. Puviaq Vegetation Assessment [oversummer ice pad]. August 15, 2003.

[89] EA: AK-023-02-033. p 8.

[90] Assessment of Impacts Associated with a Rolligon Trail in Northeastern National Petroleum Reserve-Alaska, 2002. Prepared by ABR, Inc., Fairbanks, AK.

[91] IAP/EIS. p. IV-G-17.

in less tundra impact, and that most disturbed tundra areas are expected to recover within ten years, although the reestablished community composition may be different.

Some tundra travel impacts are expected to occur despite existing stipulations, and further mitigation is not presently practicable. The yearly repetition of overland moves or ice road construction on the same trails could worsen the impacts. The current stipulation (24i) matches the statewide requirement that has been in place for over 40 years. Based on observation of tundra impacts over the past few decades and recent demonstration data, less than 12 inches frost/6 inches snow cover may provide sufficient protection for tundra travel and ice road/pad construction, under certain conditions (e.g., Rolligon use). Increased understanding may lead to more flexibility, without increased risk of surface impact. [92, 93]

In an ongoing effort to reduce impacts of tundra travel, workshops have been held annually to review related technology and methods with agency personnel, technical experts, NSB residents, and project personnel. As a result, tundra travel standards and practices are under reconsideration. New data and increased understanding may lead to more flexibility, without increased risk of surface impact from tundra travel.

Travel across floodplains also involves stream crossings; although the proposed project does not require any major ice bridges. Most proposed stream crossing sites are expected to be frozen to the bottom. There is expected to be minimal impact to the streambed, stream banks, or protective shoreline vegetation along the ice road route. Impacts may be greater along crossing routes where the banks are sandy and well-drained (susceptible to scuffing and gouging). Impacts to steam bank shrubs (e.g., willows) include broken and dead limbs and delayed greening (under ice roads). Repeated use of the same site would likely worsen the level of impact. Methods to reduce impacts to willows are under study.[94]

Ground disturbance along trails in sandy soils can damage or destroy vegetation, depending on the degree of disturbance. The bluebell *Mertensia drummondii* is known to occur on sand dune habitat along the Kogosukruk River (Northeast Planning Area). If present, these and other plants found in sandy substrates could be impacted. Snow trail routes are selected to minimize topographic relief. Accordingly, impacts to vegetation are expected to be localized and minor.

Mitigation measures incorporated in the proposed action should protect soils, wetlands, and riparian zones from significant impacts. Since most of the NPR-A coastal plain is classified as wetlands, there is no practicable upland alternative. All facilities will be short-term and temporary. The proposed action complies with recommendations of the 1999 BLM Raptor Workshop that wetlands and riparian habitats important to raptors not be modified in a manner that could "detrimentally and significantly" reduce prey availability.[95] The proposed action will incorporate all practicable steps to minimize impacts on wetlands and floodplains, complying with EOs 11988 and 11990.

Threatened and Endangered Species, Polar Bears, and Other Sensitive Wildlife

Related Stipulations: 2, 3, 24a, 51, 57, 76, 77

Discussion Incorporated by Reference:
Exploration drilling activity takes place in winter, when spectacled and Steller's eiders, the only two local species listed under the ESA, are absent. Consequently, there will be no impacts to these species from disturbance. The USFWS has issued a "No-Effect" determination for exploration drilling projects in NPR-A for both listed species (included as Appendix A). Related discussion is presented in the IAP/EIS (pp. III-B-48 to III-B-53), and Section III.B and Section IV.D.1 of EA: AK-020-00-011 and EA: AK 023-01-003, incorporated by reference.

[92] Petroleum News. *DNR Receives Funds For Tundra Travel Research*. April 13, 2003. p. 12

[93] CRREL Report 91-21. Construction Guidelines for Oil and Gas Exploration in Northern Alaska. November 1991. pp. 26-27.

[94] Draft Proceedings of Workshop on Impacts of Winter Exploration Activities on Tundra Soils and Vegetation of Alaska's North Slope. BLM. January 14-15, 2003.

[95] USDOI Proceedings. February 2-3, 1999. pp. 16 - 17.

The polar bear is not listed under the ESA, but the MMPA requires special management to avoid unnecessary impacts. CPAI has developed a number of federally and locally approved polar bear plans as part of normal North Slope winter operations within 25 miles of the coast. These plans minimize the potential for adverse impacts on any polar bears that might be encountered. However, potential for minor impacts to individual bears or maternal denning is still present, especially since den sites, if any, will likely not be known in advance. Grizzly bears have been sighted in the vicinity of the proposed project in the spring, after most exploration activities have concluded. Related discussion is in the IAP/EIS (pp. III-B-46 and pp. IV-G-37 and IV-G-38) and EA: AK-023-01-001 (p. IV-19), incorporated by reference.

Analysis of Proposed Action: No "critical habitat" has been designated for spectacled or Steller's eiders in the project area, and no eider habitat is expected to be adversely affected. Consultation with the USFWS under Section 7 of the ESA has been completed for the two listed species of eiders. Additionally, wellheads will be protected from providing nesting, denning, or shelter sites for ravens, raptors and foxes, as described in the IAP/EIS. (Appendix C, Threatened and Endangered Species Consultation).

CPAI has submitted a polar bear avoidance and encounter plan to USFWS. There is no known grizzly bear denning habitat associated with the proposed project; however the potential for impacts is still present since all den sites are not known. Individual bears may also be present with the potential for disturbance by project activities.

Impacts to wildlife include loss or damage of habitat and altered patterns of habitat use (e.g., noise and traffic disturbance). Since animals are mobile and operations are seasonal, no lasting adverse impacts to bear, caribou moose, muskoxen, or other furbearers in the area are expected. Any direct or indirect adverse impacts to local wildlife populations are expected to be localized, minor, and short term (e.g., startling and temporary displacement of individuals).

There is no known documentation that indicates ice roads or overland trails have shifted the general abundance or distribution of caribou, small mammals, birds, other wildlife or their habitats. Some local residents have reported displacement of caribou and furbearers from the vicinity of seismic operations. The limited presence of birds and other wildlife in the winter should reduce the risk of impacts to low levels. The Applicant will have plans in place to minimize harassment, displacement, attraction or injury of wildlife. Activities are far enough inland to avoid risk to the marine environment and, hence, no impact to bowhead whales, other marine mammals, seabirds, or their habitats is expected.

Water Resources and Potential Impacts to Water Quality, Fish, and Waterfowl

Related Stipulations: 1, 3-12, 14-22, 24c-e, 24h-j, 24m-n, 26-28, 59-65, 67, 70, 71

Discussion Incorporated by Reference: Potential impacts to fish, waterfowl, and water quality were previously described and evaluated in EA: AK-020-00-011 (pp. IV-4 through IV-7) and EA: AK-23-01-003 (p. IV-5 through IV-8), which are incorporated by reference.

Previous evaluations of methods used by the applicant for estimating water availability and subsequent monitoring of water withdrawals have produced no evidence of adverse effects to fish due to water quantity or water quality.[96] Lake recharge studies and anecdotal information from several North Slope residents indicate that spring recharge has been sufficient to replace volumes withdrawn during the rest of the year. CPAI Subsistence reports also indicate that waterbodies have been protected from impacts of surface use and spills.

Analysis of Proposed Action: Lake water quality data is within the expected range of North Slope waters. It is noted though, that even at a relatively light load of chloride (e.g., 25 mg/L), the salts could become quite concentrated in free water under the ice. No lake had specific conductance or chloride concentrations expected to affect tundra vegetation or creek biota when used for ice roads and bridges that melt in the spring. The high degree of dilution at breakup should mitigate any potential effects of salinity on local biota associated with the ice road.

[96] NPR-A Lake Recharge Study. 2001.

CPAI identified a project need of an estimated 92 MG of water for the exploration program. Using the Stipulation 20 methods for determining available water, the 12 freshwater lakes have an estimated 918.24 MG of free water and ice aggregate available (112.1 MG of which is free water). The ADNR Water Resources Section (in consultation with the OHMP) approved water use of 15 percent under the ice volume below seven feet on all fish bearing lakes, with ice aggregate removal restricted to areas of naturally grounded ice. No limits were placed on non fish-bearing lakes. BLM will accept the State's permit conditions, with the only potential impact on fish likely to be slightly stressed habitat conditions during winter.[97]

Removal or compaction of snow cover can increase the depth of freezing, reducing the quantity and impacting the quality of water under the ice. Stipulations 19 and 24e are designed to avoid these potential impacts. Stream crossings must be approved by OHMP. As in previous years, a minimal amount of snow will be cleared from all fish-bearing lakes approved for water use. Snow removal from non-grounded portions of fish-bearing lakes must be approved by BLM and OHMP on a case-by-case basis.

Wastewater will be treated and discharged under NPDES permit or hauled off site for disposal. Fuel and material handling practices should generally protect lakes from potential pollution. Grandview 2 and Carbon 1 are within 0. 5 miles of Fish Creek, and there is limited potential for a major release at these drill sites to reach Fish Creek. However, there is no direct waterbody connection between either drill site and the river, and a spill would occur when the ground is snow-covered and frozen. These conditions facilitate containment and cleanup and should prevent any appreciable amount from reaching the river. The approved ODPCP, including the mandated "end date" for drilling, will help ensure that required cleanup would occur under winter conditions to the extent practicable.

In summary, expected impacts of water withdrawal to fish or wildlife should be minor, localized, and temporary. There has been no relevant documentation of water withdrawal greater than the authorized amount, failure to recharge, or fish die-off in a lake where authorized withdrawal had occurred.

Fish Habitat LUEAs. The proposed action includes ice road crossings of the Fish Creek LUEA and two drill sites with local access roads in the Deep Lakes LUEA. Fish Creek and the Deep Lakes area have been evaluated as part of an overall Fish Habitat LUEA that provides important spawning, migration, rearing, and overwintering habitat for fish. [98]

The Deep Lakes Fish Habitat LUEA extends 0.25 miles around the perimeter of any fish-bearing lake within or partially within the deep lake zone (e.g., lake M0233), with permanent oil and gas facilities prohibited (Stipulation 39g). CPAI intentionally avoided use of deep lakes in the Pik Dunes area that might provide lake trout habitat.

Site inspections and oversight by CPAI's local Subsistence Representative will help identify and mitigate potential impacts to Fish Habitat LUEAs. Fuel and materials handling practices, along with spill response and containment measures will also protect LUEAs from potential pollution. The only expected impacts to fish habitat will be possible short-term, temporary habitat stress from water withdrawal.

A finding on potential impacts to Essential Fish Habitat (EFH) has been made for the proposed project. Full text of the BLM finding, which concludes that proposed actions "*may affect, not likely to adversely affect,"* [EFH] is included in Appendix B. Additionally, no adverse impacts to waterfowl habitat have been reported as a result of building ice roads over the past several decades, including several years of ice road and pad construction in the Colville River area and the Northeast NPR-A. The proposed action is also consistent with recommendations of the 1999 BLM Raptor Workshop that lakes and ponds important to raptors not be modified in a manner that could "detrimentally and significantly" reduce prey availability.[99]

[97] If water withdrawal modifications are made by ADNR an exception to stipulation number 20 may be considered.

[98] EA: AK-020-00-011, EA: AK -023-01-003, and EA: AK – 023-02-005. Section IV.D.1.

[99] USDOI BLM. Proceedings of the National Petroleum Reserve-Alaska Raptor Disturbance and Mitigation Workshop (BLM/AK/ST-00/013+6760+020). February 2-3, 1999. pp. 15 and 1.

Local Land Use and Subsistence

Related Stipulations: 1-26, 49-55, 57, 59-64, 67, 73

Discussion Incorporated by Reference: Alaska is unique in that local land uses, including subsistence, are strongly tied to cultural values. These values have been discussed in previous environmental impact analyses and their associated FONSIs, including the ANILCA Section 810 findings[100]. These evaluations address actions considered comparable to the proposed action, and related discussions are incorporated by reference.

Analysis of Proposed Action: The proposed project involves winter activity in an area with high subsistence value. The importance of subsistence has been a general topic at all meetings with local residents. The NPR-A SAP typically meets quarterly and advises applicants and BLM on potential conflicts between proposed development actions and subsistence activities. Additionally, a Subsistence Protection Plan is required for each exploration program (Stipulation 59).

In previous years, the CPAI plan has included a local Subsistence Representative to identify and help mitigate potential impacts on subsistence. The required biannual reports have indicated nothing more than minor displacement of caribou one winter and essentially no direct impacts to subsistence the other three winters of CPAI exploration activity.[101] The proposed project avoids known Native Allotments, long-term cabin and campsites, and TLUS.

It is expected that the proposed multi-year winter exploratory drilling program will not substantially impact subsistence resources or restrict use of, or access to, subsistence resources. The project will occupy the smallest practicable amount of public land determined necessary, on only a temporary basis. Stipulations and other protective measures will help mitigate impacts on subsistence. Impacts will be re-evaluated based on the subsistence reports filed after each season of proposed exploration activity.

[100] See documents cited in footnotes 4-21. Section IV.D of documents 4, 6, 8, 10, and 12; p. 4-7 of document 16.

[101] May Subsistence Report, NPR-A Exploration, ConocoPhillips Alaska, Inc. May 2000-2003.

Scenery/Wilderness/Primitive Recreation Opportunities

Related Stipulations: 1-12, 14-22, 24, 26-28, 51, 56, 57, 59-65, 67, 70, 72, 73, 75, 76

Discussion Incorporated by Reference: The project area is predominately low-relief wetlands, with little visual variety, contrast, or harmony. No designated Wilderness Area or designated Wilderness Study Area is involved. BLM has no record of commercial recreation services using the general vicinity during the winter. No existing or planned public recreation facilities are associated with the project area. A discussion on local recreation values was included in Section IV.D.1 of EA: AK-023-01-003, and its resulting FONSI, which are incorporated by reference.

Analysis of Proposed Action: The proposed project does not provide long-term access, which could impact on naturalness, wilderness values/attributes, or scenic resources. Some localized noise, air pollution, and visibility of industrial activity will adversely affect values of solitude, quietude, and the natural appearance of the winter landscape, but these effects are short-term and are not expected to degrade primitive winter or summer recreation to any notable degree. The tundra may appear different (e.g., greener, browner) under melted ice road/pads, especially when viewed from the air. This effect may persist for multiple seasons, but is not permanent and seems to have no functional effect on land use.

Environmental Justice

Related Stipulations: Governed by EO 12898 (See discussion on Subsistence.).

Discussion Incorporated by Reference: Federal agencies are required to identify and address actions that would have disproportionately high and adverse human health and environmental effects on minority and low-income populations. Alaska Native landowners and residents could be directly affected by the proposed action.

No disproportionately high and adverse human health or environmental affects on minority or low-income populations are expected, as discussed in

the IAP/EIS[102] and in Section IV.D.1 of EA: AK-023-01-003, incorporated by reference. Numerous stipulations and other protective measures will help mitigate impacts on these groups of people in the project area. Additionally, employment opportunities are available (but not restricted) to residents of Nuiqsut and Barrow because they are most conveniently located to the project area.

Analysis of Proposed Action: Subsistence is an important source of food for North Slope residents. Consequently, impacts to subsistence have a direct relationship to the analysis of impacts that may have a disproportionately adverse effect on minority and low income populations. The previous discussion on Subsistence concludes that that the proposed multi-year winter exploratory drilling program is not expected to substantially impact subsistence resources or restrict use of, or access to, subsistence resources.

The proposed action involves potential economic gains at multiple levels: direct employment and utilization of local services, access fees, and, if commercial quantities of oil or gas are discovered, state and national taxes and royalties. CPAI has policies and procedures in place for hiring and training local residents. Additionally, $28 million from the first lease sale was disbursed to the NSB to assist affected communities in dealing with potentially adverse impacts in the NPR-A. Another $33 million from the 2002 resale was made available for community grants. No significant restriction on the continuation of subsistence in the project area is expected. In general, the proposed action is expected to have a short-term, largely beneficial effect on the local economy.

Adverse Energy Impacts

Under direction from the National Energy Office, BLM is required to determine if an official decision will have an adverse energy impact (i.e., impact on energy development, production, supply and/or distribution). There would only be an adverse energy impact if the proposed action is denied or substantially reduced. If the proposed action is approved, there will be no adverse energy impact.

[102] IAP/EIS. Section IV.A.6.a and Appendix D.

4.3.2 Unavoidable Adverse Impacts

Despite the system of controls in place and the modern technology and methods proposed, some minor impacts from the proposed project cannot be avoided. They include:

- Temporary surface disturbance by winter drilling at well sites, with a permanent subsurface marker.
- Temporary increase in industrial activity affecting wintertime local tranquility and cultural solitude.
- Temporary minor impacts to tundra from the packed snow trail and ice roads/pads. Longer-term, but relatively minor, visual impacts from multiple green and/or brown trails along portions of the access corridors.
- Short-term visual and noise impacts of drill rig, camp, traffic, etc.
- Possible minor, temporary disturbance with possible displacement of some wildlife in the area while exploration activities are underway.
- Possible minor, temporary impact on subsistence resources and activities if caribou or other animal movements shift away from places where winter activity occurs or from associated summer activity, especially helicopter traffic.
- Possible minor, temporary loss of a few ground-dwelling animals (e.g., lemmings, voles, and ground squirrels) due to ice road/pad construction and the hardened overland trail. This would be an adverse impact to those individuals lost, but not to any local wildlife population.
- Temporary restriction of public access to land around drill sites during active drilling activities (i.e., air exclusion zone) to meet air quality requirements.
- Temporary, localized, minor degradation of air quality and possibly water quality (oxygen depletion; wastewater disposal; spills).

Unavoidable adverse effects have been broadly evaluated for those areas considered for leasing, leased, and subsequently explored.[103, 104] The site-

[103] IAP/EIS. pp. IV-I-1 through IV-I-3. and

[104] Northwest NPR-A Draft IAP/EIS. pp. IV-474 IV-480.

specific effects expected from the proposed action are consistent with those impacts, and none of the impacts are expected to be significant during exploration over the next 5 years.

4.3.3 Potential Impacts of Possible Future Permanent Facilities

Permanent facilities are expressly prohibited during exploration. In addition to stipulations associated with exploration and other activities, the 1998 ROD contains 20 stipulations that are specific to any future permanent facilities. CPAI has proposed development at two previously explored sites in the NPR-A, and is investing in further exploration to determine whether a commercial discovery of oil and gas exists on other leases, and whether production of any oil and gas reserves discovered under the proposed action is economically feasible. Potential impacts of possible future permanent facilities were evaluated in Section IV.G of the IAP/EIS and in Section IV.D.2 of EA: AK-023-01-003, which are incorporated by reference and summarized below.

Potential development scenarios associated with the proposed action are not defined at this time. However, general descriptions, issues, and potential impacts of oil and gas development were considered by the Interior Secretary in determining whether to proceed with lease sales, and where to offer lease sales in the Northeast NPR-A.

The IAP/EIS evaluated the hypothetical discovery and production of two oil fields in the NPR-A south of Teshekpuk Lake. When these discoveries might be developed is only speculation until exploration wells are drilled and evaluated (p. IV-H-1). Impacts associated with conceptual development of two oil fields are discussed. There is no new information about potential impacts of proposed development beyond those discussed in the IAP/EIS, which is incorporated herein by reference.[105]

There is a producing oil field at Alpine, about 50 miles to the east, and a proposal to develop oil and gas discoveries at Spark and Lookout Prospects. These prospects are in the vicinity of the proposed action and likely would be associated with existing infrastructure at the Alpine field.[106] An EIS is underway to identify and evaluate potential impacts of that development project. If a commercially producible discovery is made as a result of the proposed action, subsequent work to develop and produce the oil and gas will also require a separate evaluation and public involvement process under NEPA, based on the specific development plan.

4.4 POTENTIAL CUMULATIVE IMPACTS FROM THE PROPOSED ACTION

CEQ Regulation 40 CFR 1508.7 defines cumulative impact as "…the impact on the environment which results from the incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions…"

To keep the cumulative effects analysis focused and relevant, governing laws and policies for oil and gas exploration projects on federal land are given priority consideration. Additionally, activities that are more certain and geographically closer to the proposed action are given greater weight. For purposes of this cumulative impact analysis, potential activities that meet the CEQ definition are:

- Winter geophysical (seismic) operations
- Traditional overland re-supply and winter travel associated with Barrow, Atqasuk, and Nuiqsut.
- Other winter exploration in the NPR-A, the Colville Delta area, and the western Foothills.
- Nearby construction and production activities.

Based on the proposed action, focus will be on the following cumulative impacts:

- Wildlife disturbance
- Visual and functional impacts to the tundra
- Conflict with subsistence
- Oil and gas industrial development and associated pollution
- Economic potential for village and regional corporations and the NSB; increase in state and federal revenues

[105] IAP/EIS. pp. IV-G-1 through IV-G-83.

[106] CPAI. Letter to K. Laughlin, DGC. November 18, 2002.

4.4.1 Framework of the Analysis

The cumulative effects of past, present, and reasonably foreseeable oil and gas activities in and around NPR-A, including state and private lands and offshore, were evaluated in Section IV-H of the IAP/EIS, which is incorporated by reference. The framework for this evaluation is based on multiple scenarios of leasing, oil price, exploration, and production activities. The IAP/EIS evaluation was expanded to incorporate more timely, site-specific considerations described in EA: AK-023-03-008 (pp. 4-19 and 4-23), which is incorporated by reference.

Since the IAP/EIS was completed and the ROD issued by the Secretary of the Interior, there have been several changes directly affecting the North Slope, particularly the NPR-A. Changes since the ROD include:

- Fluctuating price of oil and gas
- Lowering U.S. production levels of oil with increasing dependence on foreign oil
- Oil industry realignment, with a commitment by industry to the Governor of Alaska that there will be a continuing investment in exploration and development in Alaska, with corresponding opportunities for employment of Alaska residents
- Increasing opposition and litigation challenging offshore exploration and development
- Development of a National Energy Policy that specifically references the need for continued and expanded leasing and permitting in the NPR-A
- Increased threat to national and international security
- Proposal to develop oil and gas production facilities in the NPR-A.

This assessment considers related analyses that were completed after the ROD was signed. BLM is in the process of completing a Final EIS associated with federal oil and gas leasing in the Northwest Planning Area of the NPR-A. That effort is re-evaluating the effectiveness and applicability of the stipulations that have been applied to leases in the Northeast Planning Area. BLM has also begun an effort to update the Northeast NPR-A decisions; although, this cumulative effects evaluation is based on current requirements of the 1998 IAP/EIS and ROD and existing lease stipulations. Other new considerations include findings reported in the "Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope" (National Research Council [NRC], March 2003).

Reasonably foreseeable activity is considered. For example, in association with the Corps of Engineers, the BLM has initiated a NEPA evaluation of proposed development of several Alpine satellites and possibly a field in the NPR-A (i.e., potential development of the Spark/ Lookout discoveries) that could provide a western extension of the infrastructure linked to TAPS.

This cumulative impacts analysis considers the potential effects of activities on State and Native ownerships in the vicinity of NPR-A, including continued development of the adjacent Alpine oil field and continued leasing of nearby state and private lands for oil and gas exploration.

Recently, Total E&P USA filed notification of staking multiple well sites for an exploration program on its leases south/southwest of the proposed Kokoda sites. BLM field-examined eight potential drill sites, two of which are in the southern part of the Pik Dunes LUEA. The Total E&P USA program would employ methods similar to those evaluated for other NPR-A exploration programs. Equipment and supplies were air-lifted to the existing all-season airstrip/storage pad at Inigok in early September, and will be moved via trail and/or ice road to the selected drill site(s) for the winter drilling season. The drill rig will be moved to the project area from the existing gravel road system by Rolligon, and may be returned to Deadhorse or stored at the Inigok pad after the first season. BLM has issued ROW/land use approvals and the State has issued temporary water use authorizations to support the proposed Total E&P USA drilling program. Cumulative impacts of the proposed Total E&P USA project and the CPAI proposed project would be similar to those evaluated for the period when CPAI and another operator (i.e., BPXA or Anadarko) had concurrent programs in proximity to one another.[107]

Accordingly, no significant long term direct, indirect cumulative impacts are expected.

[107] See EAs cited in footnotes 6,8,10, and 12.

Stipulations in the Northeast Planning Unit prohibit construction of permanent facilities during oil and gas exploratory drilling on federal land within NPR-A (Stipulations 27 and 29 through 48). The proposed wintertime exploration program does not include permanent facilities. Likewise, none of the previous exploratory drilling programs on federal oil and gas leases have had authorization to construct permanent facilities on federal land in the NPR-A. However, options to construct a permanent road from the Dalton Highway to the NPR-A boundary near Nuiqsut are currently under study.[108] At this time, the program has not reached the stage where the exact alignment or information about stream/river crossings is available.

One consideration behind the State's interest in a permanent access road to the NPR-A area is the average period of ice road availability due to weather conditions. Over the past decade, ice road use on the North Slope has been shortened from 208 days (1970) to 103 days (2002). This has resulted in less time to build ice roads, complete drilling operations, and remove the drill rig. This restriction becomes a greater issue as exploration activities extend further west into the NPR-A.

4.4.2 Parameters of the Analysis

Many impacts associated with various elements of a winter exploration program can be quantified. However, the analysis of cumulative effects is more qualitative because it is not just an additive process. BLM established a threshold of acceptability in evaluating the nature of cumulative impacts associated with the proposed action. The basis of "unacceptable" consequences includes the following:

- Conflicts with the purpose and intent of related laws and policies
- Significant impacts to the local airshed
- Significant impacts to historical and paleontological resources.
- Significant impacts to Threatened and Endangered Species and EFH
- Significant impacts to the population and productivity of other animal and plant species
- Significant impacts to floodplains, water resources, and water quality of the area
- Significant impacts to local lifestyles (i.e., subsistence)
- Significant impacts to the economy of the State and local governments
- Significant energy impacts.

The proposed action includes no permanent facilities or long-term activities. Cumulative effects will be primarily based on a 5-year program (2003-2008) of winter-only construction of new ice pads, roads, and airstrips; packed snow trails; temporary construction and drilling camps; and possibly a new over-summer insulated ice storage pad, as described in Section 2. The cumulative effects analysis is bound by parameters appropriate for a relatively short-term winter exploration program.

The cumulative effects analysis also assumes that any existing authorizations for ice roads and water sources necessary to provide access to the proposed winter exploration drilling operation would have appropriate extensions or reauthorizations through the proposed project period. The cumulative effects of those existing authorizations would be no different, individually or collectively than considered by BLM for the original authorizations of similar activities.[109]

4.4.3 Analysis of Proposed Action

Most proposed actions will take place in the winter, when conventional North Slope technology and practices are expected to mitigate potential adverse impacts. There is winter seismic work in the Northeast NPR-A every winter, and has been for many years; however, there is no specific plan for proposed seismic work and the proposed exploration activities to occur concurrently in the same location. Related impacts from seismic work are discussed in the IAP/EIS. There do not appear to be any significant cumulative impacts outside the parameters described in the IAP/EIS. [110] In general cumulative effects of seismic operations are expected to be minimal, principally the creation of additional green trails in the area.

[108] M. McKinnon, DOT&PF, 2003 Tundra Access Symposium.

[109] See EAs cited in footnotes 4,6,8,10,12, 14, 16 and 18. Potential Cumulative Impacts.

[110] IAP/EIS. Section IV-H.

Historically, the Inupiat have navigated from Barrow to the Nuiqsut region along a cluster of coastal and landfast ice routes. BLM has marked trails for this purpose. Since 1983, local villagers have constructed ice bridges across the Colville River, from Nuiqsut to Oliktok or to the nearest oil exploration ice road, whichever is closer.[111] These routes are used regularly in winter for hauling fuel, food, and supplies to villages in the NPR-A.

The 2003 NRC report notes that seismic trails, trails of other off-road vehicles, ice roads and ice pads cause concern because of damage to vegetation and because they can be seen from the air. Since 1999, the effects of packed snow trails and ice road and pad construction in the NPR-A have been field checked during construction, operation and during succeeding summers to determine if there were significant adverse environmental impacts. To date, only minor impacts to the tundra vegetation have been noted. Findings and observations have been discussed with operating companies, local residents, and government officials, resulting in the elimination or reduction of damage (e.g., by enforcing speed limits, refining water withdrawal techniques, expanding the width of the ice road in key locations, pre-marking the grade at stream crossings, and installing reflective markers along the edges of ice roads).

For three years, BLM required exploration companies to monitor selected lakes to identify any recharge problems following winter water withdrawals for ice road/pad construction. During this monitoring program, no significant adverse effects from water withdrawal were found, and this requirement was suspended.

There are typically several winter exploration programs active during any one year. Over the past four years, the BLM, State of Alaska, NSB, and private landowners have evaluated and/or authorized access to and construction of ice pads at up to 45 drill sites for drilling up to 117 wells in the Northeast NPR-A (see Table 7). Of these activities, only 14 wells have actually been authorized. Application of the protective stipulations from federal, state, and local agencies have resulted in no known significant individual or cumulative impacts to continued use of subsistence resources or to the environment in the Northeast NPR-A.

Multi-year winter exploration drilling projects within and adjacent to the NPR-A (including the proposed action) have been discussed with local residents and elders, the Kuukpik Corporation, KSOP, NSB, Native Village of Barrow (NVB), ICAS, regulatory and resource agencies, the NPR-A SAP, and others to assure that project-specific and cumulative effects are not expected to have a significant adverse impact to subsistence resources or access. Potential economic opportunity through local employment and commerce is a factor.

Previous analyses have generally concluded that the cumulative effects associated with exploration of oil and gas resources on valid leases within the NPR-A would be relatively minor and short-term and would not cause "unacceptable" consequences. Exploration in nearby locations (e.g., Colville delta area), if concurrent with NPR-A exploration activities, could increase cumulative impacts on local residents and resources. [112]

There is also potential for concurrent discovery and development of one or more new oil and gas fields, which could change cumulative impacts. State and federal lease sales have been subject to public review and comment to evaluate potential impacts. The Draft Northwest NPR-A IAP/EIS notes that, "Recent discoveries in the Northeast NPR-A targeted the Alpine producing horizon and all have encountered oil and gas condensate." These discoveries are located approximately 15 to 25 miles southwest of the Alpine site. Potential development of the Spark/Lookout discoveries is the subject of an EIS currently being prepared to assess additional development of the Alpine Field. There is also potential for a commercially developable find on private leases in the area.

The 2003 NRC report indicates that there were cumulative effects associated with the operation of year-around production facilities and roads. Existing operations have been considered, but there is also potential for future impacts related to future construction of the Alpine Satellites production facilities or expansion of production operations at

[111] IAP/EIS p. III-C-61.

[112] See EAs cited in footnotes 4,6,8,10,12, and 14 and 16. Potential Cumulative Impacts. Section IV.5.

Alpine. Any major development in the NPR-A or new development requiring associated federal action (e.g., permitting) will be subject to further NEPA review.

A NEPA review was completed for the decision on federal leasing within the Northeast Planning Area and for each of the six exploration drilling projects subsequently authorized. NEPA ensures additional environmental review of any future oil and gas exploration and/or development actions, which would include a comprehensive evaluation of the effectiveness of the stipulations, any additional mitigation, and potential impacts before allowing any future action.

Careful evaluation of each project within the NPR-A has been performed to assure that the projected impact for each resource did not become a significantly adverse cumulative impact or cause BLM to significantly modify the proposed action. In this respect, cumulative impacts from the proposed action are considered to be relatively minor and short-term. The appropriate agencies have been consulted to confirm that species listed under the ESA and MMPA, and EFH are not directly, indirectly, or cumulatively impacted in a significantly adverse manner. In addition, this EA gives a strong weighting to actual impacts of ice road and hardened trail use, drilling from ice pads, and water withdrawals from both fish-bearing and non-fish-bearing lakes completed in and near the NPR-A in recent years without significant adverse environmental effects – either at the project level or in a cumulative perspective.

The cumulative effects analyses presented above continue to support the finding of this EA that cumulative impacts presented by the proposed action, when considered with other past, present, and reasonably foreseeable future actions, are minor and short-term.

It is noted, however, that while the 1998 ROD and other federal, state, and local regulatory authorities provide the best protection available with current knowledge and technology, the process of environmental assessment is ongoing and changes may result with time, experience, and additional knowledge. For example, if a permanent road to Nuiqsut were constructed, it would result in considerable changes in the area, which may, in turn, result in cumulative impacts not determinable at this time. It will be important to review recent changes on a regular basis to keep cumulative impact analyses current.

4.5 MITIGATION AND MONITORING

CPAI and other North Slope Operators have worked actively towards minimal impact exploration techniques for the last several decades. As an example CPAI sponsored four annual ice road workshops to discuss environmental effects associated with winter exploration programs in and around the NPR-A and State lands to the east. The 2003 Ice Road Workshop was sponsored jointly by ADNR and BLM. Attendance has included key Exploration and Drilling Company officials, North Slope contractors, other operators, BLM and other regulators, and North Slope residents. Open discussions have focused on ways that future winter exploration activities could be performed with enhanced environmental protection. Many of the ideas posed at the workshop, such as effective means to reduce tundra damage, have been incorporated into company exploration plans, including the proposed project.

CPAI has also incorporated the extensive mitigation measures specified in the 1998 ROD in its winter exploration plan and permit applications to BLM and other regulatory agencies. All practicable mitigation has been adopted for this project, including measures for applying fish protection standards to all lakes to ensure that total impacts of the proposed action remain minor.

BLM will give special attention to monitoring the following resources:

- Subsistence
- Cultural resources
- Tundra/vegetation
- Hydrology
- Fish habitat
- Threatened and endangered species
- Raptors

Special stipulations for additional protection of raptors were recommended in the 1999 BLM Raptor Workshop. Timing and location of

activities between April 15 and August 15 are discussed in Section IV.E of EA: AK-023-01-003 (p. IV-28), incorporated herein by reference.

Snow removal beyond the minimal amount required for vehicle access and water/ice removal may occur on non-fish-bearing lakes, lakes less than 7 feet deep, and grounded portions of fish-bearing lakes. Removal of additional snow over free-water portions of fish-bearing lakes will require BLM and OHMP approval on a case-by-case basis. Approvals from OHMP are provided to BLM for consideration in making these determinations prior to additional snow removal over free-water portions of fish-bearing lakes.

Surface use and occupancy of the project area will terminate before the arrival of spectacled or Steller's eiders. Standard provisions for polar bear encounters and denning, handling of hazardous materials, fuel storage, and drilling operations will be monitored. Finally, BLM and the project Subsistence Representative will perform a closeout inspection. Any final cleanup of the project area will be performed during the summer following operations to prevent unexpected adverse environmental effects, with additional mitigation measures required during subsequent years, if indicated.

Two fundamentally different monitoring programs are associated with a winter exploration program: 1) the drilling operation, including the drill rig and ancillary facilities, and 2) other surface activities. The former involves geotechnical and engineering considerations, (e.g., presence of H2S gas). The latter addresses impact to vegetation from ice road/pad compaction, wildlife disturbance, lake suitability for water supply, and water volumes that may be removed.

CPAI will have a subsistence monitoring plan in accordance with Stipulation 59, similar to those approved by BLM for previous winter exploration drilling programs in the NPR-A. As in past years, the plan includes a designated point of contact between the Applicant and a Subsistence Representative (resident of Nuiqsut and/or Barrow) employed by the Applicant to provide third-party inspection services.

BLM will also coordinate with that person to track any subsistence issues that may arise. Other monitoring measures will involve drilling and surface protection. The objective of this monitoring program will be to ensure that all terms and conditions in the federal oil and gas lease, the 1998 ROD, and associated BLM permits are met in a timely manner. This will include monitoring the construction and maintenance of ice roads and pads. Special attention will be given to assuring that water intakes have proper fish screening, to the final plan for stream crossings, and to plans for breaching ice bridges before breakup to facilitate water flow.

Additional mitigation measures developed as a result of the permitting process will modify the Project Proposal or will be incorporated by BLM, as appropriate. These include OHMP conditions for all ice road/bridge crossings of fish-bearing streams and water withdrawal from lakes outside the NPR-A. These conditions minimize potential adverse impacts to stream banks during spring breakup.

4.6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Cumulative impacts have been found to be within the parameters described in the IAP/EIS, and no significant new cumulative impacts not previously evaluated have been identified. Based on this impacts analysis, which considers and incorporates by reference previous studies and findings on exploration in the Northeast NPR-A and the North Slope in general, and the stipulations and mitigation measures required by federal leases, it is concluded that impacts from the proposed action will be minor and short-term.

Additionally, CPAI has maintained an open, effective communication process with local governmental entities and residents. The proposed action incorporates several excellent recommendations of local residents and governmental entities to ensure that the winter exploration program is environmentally responsible and does not cause significant restriction of subsistence use or access to subsistence resources.

It is concluded that the 79 stipulations included by

the Secretary of the Interior in the 1998 ROD for the Final IAP/EIS for the Northeast NPR-A, combined with North Slope technology and procedures used by CPAI, and supplemental site-specific mitigation and monitoring measures, are adequate to assure maximum protection of fish and wildlife and other resources, including cultural, scenic, paleontological, and wilderness resources.

4.7 IMPACTS OF THE ALTERNATIVES

As noted, many alternatives were discussed in the 1998 IAP/EIS. Numerous stipulations were developed to provide maximum protection of the resources of the Northeast NPR-A while providing for exploration of oil and gas as authorized by NPRPA (as amended). This EA considers alternatives to the proposed action to drill up to 7 wells from ice drill pads, during a 5-year exploration program.

Because the proposed action is a continuation of an existing authorized programs using similar technology, previous analyses of potential alternatives are incorporated herein by reference. EA: AK-020-00-011 evaluated the alternatives of primary access by either ice road or hardened overland trail. EA: AK-023-01-001 evaluated air access and a shared access corridor alternative. These analyses of alternatives are incorporated herein by reference.

Based on previous analyses and goals of the proposed action, viable alternatives include 1) primary access by packed snow trail with air support, 2) primary access by aircraft, and 3) no action.

4.7.1 Alternative 1 – Primary Access by Packed Snow Trail with Air Support

Under this alternative, CPAI would construct a packed snow trail from the Alpine Development Area ice road. Ice roads would likely be constructed locally to water sources to support construction of an ice airstrip and an ice drilling pad. Rolligons would provide the bulk of heavy transportation needs until the airstrip is constructed and operational.

The value of this concept proves itself in long distance operations, where an ice road cannot physically be constructed in the time allowed due to the length of operating season. The applicant utilized this approach for the 2003 Puviaq drilling program. This alternative has been previously evaluated in EA: AK-020-00-011 (pp. IV-26 and IV-27), EA:AK-023-02-004 (p. IV-29), EA: AK-023-02-005 (pp. IV-26 and IV-27), EA: AK-023- 02-033 (pp. 8 and 9) and EA: AK-023-03-008(p. 4-25), which are incorporated herein by reference. In an extremely short season this alternative might have additional value for the ability to get to the drill site relatively early. This alternative expands the options available.

Prior evaluations of an ice road and packed snow trail alternatives all concluded that the primary differences are more from the ice road's need for water consumption (approximately 83 MG) and slightly improved capability for response to a catastrophic event. Evaluations have shown that there are no significant adverse impacts on subsistence or other important resources in NPR-A associated with increased water usage when the lease stipulations are applied.

While the reduced water use with no major ice road construction of this alternative may have some beneficial economic advantage, it increases the logistical costs by reducing the opportunities for competitive bidding for construction and transportation and limits the number of drill rigs available.

No adverse indirect or cumulative effects have been identified with either approach. Few drilling rigs are available that can be transported by air or Rolligon, which may extend the overall program to gather the same information as the proposed action.

4.7.2 Alternative 2 – Access by Aircraft

This alternative would require no ice road access except spur roads in the immediate vicinity of the drill sites, airstrip, and proposed water sources. All other elements of design and operation would be essentially the same as the proposed action. This alternative has been previously evaluated in EA: AK-023-01-001 (p. IV-28 through IV-30), EA: AK-023-02-005 (pp. IV-26 and IV-27), EA: AK-023- 02-005 (p. IV-27) and EA: AK-023-03-008(p. 4-25), which are incorporated herein by reference.

Under this alternative, the ice road between Alpine and the drill sites would not be constructed; and only aircraft support would be possible. A trail would be necessary to transport equipment to the site in order to construct an ice airstrip. Local access between the airstrip, drilling sites and water supply lakes would remain ice roads.

This alternative expands the options available, but is expensive and limited by the availability of drill rigs that can be disassembled into component parts that are air transportable. There would be no water withdrawals for an ice road to/from Alpine with the equivalent reduction (approximately 83 MG) in water use. Slightly more time would be required for major spill response and operations such as logistical support and waste management would be more difficult.

Previous evaluations associated with access by ice road or hardened overland trail only concluded that the 79 lease stipulations would prevent significant adverse environmental impacts to important resources of NPR-A, including lakes used for water withdrawal. Therefore, no overriding net environmental advantage is offered by selecting this alternative. Few drilling rigs are available that can be transported by air, which may extend the overall program to gather the same information as the proposed action.

4.7.3 Alternative 3 – No Action

This alternative considers that no proposed action is authorized. This alternative would eliminate the minor effects associated with water removal, ice pad construction, ice road construction, and drilling. However, no oil would be discovered as a result, eliminating some potential to expand national energy reserves and increase revenues to federal, state, and local governments.

In addition, exploratory drilling in other NPR-A leases might not be pursued, due to the precedent of not approving a winter exploration drilling program that has been determined to have no significant or long-term site-specific or cumulative adverse impacts. This lessens the likelihood of production facilities in the NPR-A, slightly lessens cumulative impacts of other oil development in the region, and BLM might eventually have to buy back the federal leases associated with the proposed project.

The Applicant would have the option of canceling or redesigning the project, or otherwise seeking a change in the no-action decision. Finally, the no-action alternative might shift some exploration work to the offshore areas of the North Slope, as inland areas become less available.

4.8 COMPARISON OF IMPACTS

Distinct advantages and disadvantages to each of the alternatives have been evaluated. In summary, it was determined that none of the three alternatives present net benefits to the environment or would substantially reduce the environmental impacts of the proposed action. No alternative presents a clear advantage over another. The no-action alternative presents a net disadvantage in that it does not comply with terms of federal laws and policies and does not allow access to existing, valid leases in the NPR-A. A combination of alternative modes of access presents the most flexible option – both for environmental protection and for operations that afford the potential to reduce the overall costs of winter exploration.

4.8.1 Environmentally Preferred Alternative

The NEPA process requires identification and assessment of reasonable alternatives that will avoid or minimize adverse effects of the proposed action on quality of the human environment [40 CFR 1500.3(e)]. Three possible alternatives have been evaluated: primary access by snow trail with air support, access by aircraft only (actually, mostly air), and no action.

The two winter exploration alternatives and the proposed action, all impacts considered, are environmentally equal, since no significant adverse environmental impacts would occur when the 79 stipulations and supplemental mitigation/monitoring requirements are implemented as appropriate. The no-action alternative suspends until a future time decisions about oil and gas exploratory drilling. At that time, the environmental consequences of any proposed exploration activity would need to be evaluated in the light of technology and equipment in use at that

time, the urgency to increase domestic energy supplies, and any revisions to existing Native Corporation, local, NSB, state, and federal permitting requirements and, finally, to any revised environmental standards.

The proposed action meets the objective of maximum protection to the environment while enhancing the collection of geologic/subsurface information in the shortest time frame. Therefore, the proposed action, as modified, has been selected as the environmentally preferred alternative. Alternatives 1 and 2 require more time to obtain the same base of scientific knowledge about subsurface geology. The No-Action Alternative is an indefinite deferral of the federal decision to approve or reject exploratory winter drilling as an environmentally responsible technology.

Several modifications to the proposed action were developed through this EA process and the associated permitting processes. A request by CPAI for additional water withdrawal (30% of winter volume deeper than 5 feet when only resistant fish are/are likely to be present) was not authorized by ADNR as requested by OHMP to minimize impacts to fish habitat and in favor of BLM's standard 15 percent of the estimated free water volume as required by Stipulation 20 of the 1998 ROD.

5 CONSULTATION AND COORDINATION

5.1 AGENCY COORDINATION

The proposed action has undergone review by the NSB, state and federal agencies, and the general public. The USFWS has made a "No-Effect Determination" on threatened and endangered species. In preparing its plan of operations, CPAI conducted a series of meetings with local residents. CPAI and BLM participated in an on-site inspection of the proposed drill sites. Sources proposed for water withdrawal were reviewed with the local public. The Inupiat History, Language, and Culture Commission (IHLCC) Liaison and Village Elders provided Traditional Knowledge, which was incorporated in the project plan and into this assessment. CPAI has also provided documents and permit applications that summarize the proposed action. In June 2003, the NPR-A SAP held a meeting in Nuiqsut that was broadcast on KNRW, including a discussion on proposed exploration in the NPR-A. BLM and CPAI have met to discuss the proposed action approximately monthly from spring 1999 to the present.

A SAP has been established by BLM and a subsistence plan was prepared by CPAI. The proposed plan and the current status of the proposed project have been discussed at meetings with NPR-A SAP, ICAS, NSB Planning Commission, NVB, Native Village of Nuiqsut, the Kuukpik Corporation, KSOP, and the public in Barrow, Nuiqsut, Atqasuk, Anaktuvuk Pass, and Wainwright. A summary of community involvement in NPR-A exploration program planning (1998-present) is included in Table 9.

The preparers of this EA have made the following contacts in setting the scope of analysis and alternatives to be addressed:

- USFWS
- ADNR
  - Division of Mining, Land, and Water
  - Office of Habitat Management and Permitting
- NSB
- NPR-A SAP
- NPR-A Research and Monitoring Team

5.2 LIST OF PREPARERS

This EA was prepared by BLM with technical assistance from the Hoefler Consulting Group, a third-party contractor. Following is a list of BLM staff and Hoefler team members involved in preparation of the EA.

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Blue Skies Solutions, LLC
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Table 9. Community Involvement in NPR-A Exploration Program Planning

Date	Event (Some specify applicant and/or project focus)
1/8-9/98	Meeting with community members to identify cultural/traditional use data (BPX)
8/21/98	Meeting with community members to identify cultural/traditional use data (BPX)
6/2/99	Advised Arctic Slope Regional Corporation (ASRC) and Kuukpik Corporation of (BPX) intent to drill
6/24/99	Meetings with NSB Agencies (Planning and Public Works) (BPX)
6/29/99	Briefed Kuukpik Corporation on survey work and field activities (BPX)
7/99	Meeting with Nuiqsut leaders to identify concerns; briefed ICAS (BPX and ARCO)
7/27/99	Meeting with Kuukpik Subsistence Oversight Panel (BPX and ARCO)
7/29/99	Meeting with Kuukpik Subsistence Oversight Panel (BPX and ARCO)
7/29/99	Meeting with NSB Planning Commission (Barrow) (BPX)
7/29/99	Meeting with Inupiat History, Language, and Culture Commission (IHLCC) in Barrow (BPX)
7/29/99	Meeting with Nuiqsut Community (BPX and ARCO)
8/4/99	NSB, IHLCC, Kuukpik Corporation site visit to proposed (BPX) drilling sites, water sources, and access routes
8/10/99	Site tours; NSB, Kuukpik Corporation visited drill sites, lakes, and access routes with ARCO and BLM
8/18/99	Community meeting at Anaktuvuk Pass (BPX and ARCO)
8/26/99	Open house at Barrow (BPX and ARCO)
8/26/99	Meeting with NSB Planning Commission (ARCO)
8/27/99	Community meeting at Atqasuk (BPX and ARCO)
9/30/99	NSB elders from Barrow and Nuiqsut toured (ARCO) water withdrawal lakes
10/6/99	1st Annual Ice Road Construction Symposium (agencies, operators & NSB residents participating)
10/27/99	Meeting with NSB Fish and Wildlife Management Committee (BPX and ARCO)
11/4/99	Meeting with NSB and IHLCC (BPX and ARCO)
11/10/99	Job fair (Nuiqsut) (BPX and ARCO)
12/15/99	Community meeting at Barrow (BPX and ARCO)
12/15/99	ICAS meeting (BPX)
12/16/99	Meeting with NSB Planning Commission (BPX and ARCO)
12/16/99	Meeting with the Native Village of Barrow (BPX)
12/16/99	NPR-A Subsistence Advisory Panel public meeting in Barrow (included BPX and ARCO)
3/7/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (included BPX and ARCO)
3/28/00	Meeting with NSB Fish and Game Management (BPX)
5/22/00	Consultation with NSB biologists regarding summer studies (BPX)
6/8/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (included BPX and ARCO)
8/4/00	Pre-application meetings with NSB and ICAS (BPX)
8/9/00	NPR-A Subsistence Advisory Panel meeting in Wainwright (included BPX and ARCO)
8/26/00	Site visit with BLM and NSB and applicants (BPX and Phillips)
8/31/00	Meeting with NSB Planning and Zoning Commission (BPX)
9/28/00	Meeting with NSB Planning and Zoning Commission (BPX)
10/11/00	Presentation of proposed programs in Anaktuvuk Pass (BPX and Phillips)
11/8/00	2nd Annual Ice Road Symposium (agencies, operators & NSB residents participating)
5/3/01	Village meeting in Anaktuvuk Pass (Phillips)
6/01	Meeting with Kuukpik Corporation executives (Anadarko's 5-year plan on North Slope)
7/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/31/01	Meeting with BLM at Altamura site (Anadarko)
8/8/01	Site visit with regulatory agency and members of the City of Nuiqsut Cultural Guardians and Kuukpik Subsistence Oversight panel at Altamura drill pad locations (Anadarko)
8/13/01	Staking and site visit with Nuiqsut, BLM, and Applicant (Phillips)
8/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut – all projects (included Phillips and Anadarko)

Table 9, continued

Date	Event (Some specify applicant and/or project focus)
11/7/01	3rd Annual Ice Road Symposium (with agencies, operators & NSB residents participating)
11/26/01	Community meeting in Nuiqsut Pass (Anadarko)
11/26/01	Community meeting in Wainwright (Phillips)
11/27/01	Community meeting in Atqasuk (Phillips)
11/28/01	Community meeting in Anaktuvuk Pass (Anadarko)
11/29/01	Community meeting in Nuiqsut (Phillips)
12/13-14/01	NPR-A Subsistence Advisory Panel meeting in Barrow
3/14/02	NPR-A Subsistence Advisory Panel meeting in Barrow
5/16/02	Community meeting in Anaktuvuk Pass (ConocoPhillips)
6/6/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/25/02	NSB Planning Commission Meeting presentation (ConocoPhillips)
8/15/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (including ConocoPhillips)
11/4/02	KBRW Radio call-in (local exploration activities)
11/6/02	4th Annual Ice Road Symposium (with agencies, operators & NSB residents participating)
11/7/02	Community meeting in Nuiqsut (ConocoPhillips)
11/18/02	Government-to-government meeting with Native Village of Barrow (and BLM)
11/22/02	Barrow Open house (ConocoPhillips)
12/5/02	Community meeting in Atqasuk (ConocoPhillips)
12/12/02	NPR-A Subsistence Advisory Panel meeting in Barrow (included ConocoPhillips)
1/29/03	Presentation at joint meeting of NSB Planning Commission and IHLC (ConocoPhillips)
2/2403	Community Meeting in Wainwright (ConocoPhillips)
2/25/03	Community Meeting in Atqasuk (ConocoPhillips)
3/10/03	*Planned Community Meeting Anaktuvuk Pass (weathered out – ConocoPhillips)*
3/27/03	Open House in Barrow (ConocoPhillips)
4/24/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
6/19/03	NPR-A Subsistence Advisory Panel Meeting in Nuiqsut (included TOTAL and ConocoPhillips)
7/31/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
9/25/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
10/7/03	5th Annual Tundra Access [Ice Road] Symposium (with agencies, operators & NSB residents participating)
10/30/03	NSB Planning Commission Meeting presentation in Barrow (TOTAL)
11/3/03	NPR-A Subsistence Advisory Panel Meeting in Atqasuk (included ConocoPhillips and TOTAL)
11/4/03	Community Meeting in Atqasuk (ConocoPhillips and TOTAL)
11/20/03	Community Meeting in Nuiqsut (ConocoPhillips and TOTAL)
11/24/03	*Planned Open House in Point Hope (Weathered out - ConocoPhillips*)
11/25/03	*Planned Open House in Point Lay (Weathered out - ConocoPhillips)*
12/8/03	*Planned Community Meeting in Anaktuvuk Pass (ConocoPhillips)*

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APPENDIX A
THREATENED AND ENDANGERED SPECIES CONSULTATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
FAIRBANKS FISH AND WILDLIFE OFFICE
101 12th Ave., Box 19, Room 110
Fairbanks, AK 99701

September 22, 2003

Mr. Dave Yokel
Bureau of Land Management
Northern Field Office
1150 University Avenue
Fairbanks, AK 99709-3899

Re: Exploratory Oil Drilling;
National Petroleum Reserve - Alaska

Dear Mr. Yokel:

This responds to your request for information addressing biological resources pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act). This information is being provided for use in evaluating ConocoPhillips Alaska's (CPA's) application for an exploratory drilling permit within the National Petroleum Reserve - Alaska (NPR-A). CPA plans on drilling 1-3 new wells during the upcoming 2003-2004 winter. With a possible exception to allow tundra travel and ice road/pad construction using rolligons in early winter, perhaps November, all other ground operations would begin only after the seasonal frost in the tundra and underlying mineral soils has reached a depth of 12 inches and snow cover is 6 inches deep. Wells are slated to be drilled on ice pads covering 6 acres each.

The proposed project site is within the breeding range of the spectacled eider (*Somateria fischeri*) which is listed as threatened under the Act. An aerial surveys done in 2001 observed spectacled Eiders with 10 miles south of proposed drilling locations.

Based on the proposed project description the Service concludes that this project is not likely to adversely impact listed species. Although we have limited data on bird activity close to the proposed drilling sites, spectacled eiders would likely not be present during rig/ground operations and we anticipate no additional loss of habitat value as a result of the action. Therefore, preparation of a Biological Assessment or further consultation under section 7 of the Act regarding these projects is not necessary at this time. This conclusion applies only to endangered and threatened species under our jurisdiction. It does not preclude the need to comply with other environmental legislation or regulations such as the Clean Water Act.

Thank you for your cooperation in meeting our joint responsibilities under the Act. If you need further assistance, please contact Jonathan Priday at (907) 456-0499.

Sincerely,

Jonathan Priday
Acting Branch Chief
Endangered Species

November 2003

APPENDIX B
ESSENTIAL FISH HABITAT EVALUATION

Appendix B. ESSENTIAL FISH HABITAT ASSESSMENT

On October 11, 1996, the Sustainable Fisheries Act (Public Law 104-297) became law which, among other things, amended the habitat provisions of the Magnuson Act. The re-named Magnuson-Stevens Act calls for direct action to stop or reverse the continued loss of fish habitats. Toward this end, Congress mandated the identification of habitats essential to managed species and measures to conserve and enhance this habitat. The Act requires federal agencies to consult with the Secretary of Commerce regarding any activity, or proposed activity, authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH).

For the purposes of this environmental assessment, essential fish habitat means those waters and substrate necessary for salmon spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Act, 16 U.S.C. 1801 et seq). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by salmon and may include aquatic areas historically used by salmon where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and spawning, breeding, feeding, or growth to maturity covers a species' full life cycle.

The National Marine Fisheries Service recognizes waters cataloged under AS 16.05.870 (Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, ADF&G, 1999) as essential fish habitat (BLM pers. comm.; National Marine Fisheries Service, Anch, AK; 28 Mar 2000). For the purpose of the proposed action, Fish and Judy Creeks and the Ublutuoch River meet this criteria, identified as stream numbers 330-00-10840, 330-00-10840-2043, and 330-00-10840-2017, respectively, in the catalog. Chum and pink salmon are listed as using these waters for migration. No other salmon streams in the area of proposed use are noted in the catalog. Overall, Pacific salmon species are not abundant in the waters of the NPR-A (Craig, 1989). Although chinook, coho, and sockeye salmon have been reported from the Beaufort Sea, only small spawning stocks of pink and chum salmon have been identified.

Estuarine habitat that supports young salmon as they exit freshwater for life in the sea is also EFH . The estuarine zone is used primarily by juvenile salmon smolt during physiological adaptation to the saltwater environment from the freshwater. This outmigration takes place from the time the ice moves out through August. Feeding during this time, especially the first few days, is thought to be especially critical to survival. Thus, prey and prey habitat are an important part of this particular habitat. Once they enter the ocean, pink and chum salmon hug the shore. Pink salmon spend the first few weeks in water only a few centimeters deep, with their food source including prey living in the gravel substrate (benthic insects and zooplankton). Chum salmon use intertidal areas (i.e., estuarine waters in the Beaufort Sea) for months before migrating to the outside waters. They move offshore from July to September.

Proposed Action and Effects: The purpose of the proposed action (EA: AK-023-XX-XXX) is to permit the applicant, ConocoPhillips Alaska Inc. (CPAI), for a multi-year winter oil and gas exploration drilling program in the northeast (NE) portion of the National Petroleum Reserve - Alaska (NPR-A). The geographic extent of the proposed action, which includes new drilling sites and water sources, is included the Environmental Assessment (EA). Results of this program will help determine if any of the drilled prospects contain economically recoverable oil and gas.

CPAI proposes several potential routes for access. They will build, maintain, and use an annual winter ice road system and/or use overland trails and ice airstrips for the access portion of the exploration process. The proposed action also includes development of necessary ice pads for drilling exploration wells and setting up a camp infrastructure to support drilling operations. Demobilization will occur by the end of the winter tundra travel season.

Potential effects to the salmon resources and their habitat in Fish and Judy Creeks and the Ublutuoch River include direct and indirect impacts related to water withdrawal for building ice roads and pads, ice road construction at stream crossings, and fuel transport. Resultant impacts to habitat would be minimal. The impacts are mitigated through management plan guidance, stipulations, and industry practice as outlined below. Detailed discussions of impacts and mitigation are found in the EA.

The Northeast National Petroleum Reserve - Alaska Final Integrated Activity Plan/Environmental Impact Statement (NE IAP/EIS ,1998) and Record of Decision (ROD - 1998) and several subsequent Environmental Assessments (see this EA for a list) provide management guidance for BLM. The NE IAP recognizes the fisheries values in the Judy and Fish Creek drainages through the creation of fish habitat Land Use Emphasis Areas (LUEA). Stipulations in the IAP/EIS related to the LUEA's provide that there will be no permanent facilities except for case-by-case essential transportation crossings within three miles of Fish Creek, downstream from the east boundary of Section 31, T11N, R1E and within a 1/2 mile of the creek upstream of this point. Judy Creek has a 1/2 mile setback relative to permanent facilities construction. General stipulations found in the NE EIS and subsequent exploration EA's also provide protection by prohibiting water withdrawal from rivers and streams during winter and clearing of willows along riparian zones. Proposed stream crossings take advantage of areas with low relief banks that naturally freeze to the bottom to minimize impacts to habitat and fish resources. Limits on water withdrawal from fish bearing lakes provide protection to overwintering fish. Fuel handling and storage stipulations found in the NE IAP/EIS minimize the potential for habitat contamination.

Cumulative impacts for this proposed action and past, present, and future exploratory actions are discussed in the body of this EA. Additional impacts to salmon and their habitat from this action are expected to be minor due to low numbers of salmon utilizing the systems, minimal disturbance to their habitat (i.e. stream crossings at natural freeze down sites), low potential for fuel spills, adequate protections provided by stipulations found in the 1998 IAP/EIS and ROD, and industry proposed procedures.

EFH Finding: Based on mitigation measures assigned as part of this permit, the proposed action is not expected to impact salmon or their habitat and is assigned the EFH determination: *May affect, not likely to adversely affect*, and no further EFH consultation is required.

References

Craig, P.C. 1989. An Introduction to Anadromous Fishes in the Alaskan Arctic. Biological Papers of the University of Alaska 24:27-54.

State of Alaska, Alaska Department of Fish and Game. 1999. An Atlas to the Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes, Resource Management Region V. Alaska, Department of Fish and Game, Habitat and Restoration Division.

USDOI, BLM and MMS. 1998. Northeast NPR-A Final Integrated Activity Plan/Environmental Impact Statement. Anchorage, AK: USDOI, BLM and MMS.

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