



February 2013

ARLIS

National Petroleum Reserve-Alaska **RECORD OF DECISION**

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

Alaska



The Bureau of Land Management Today

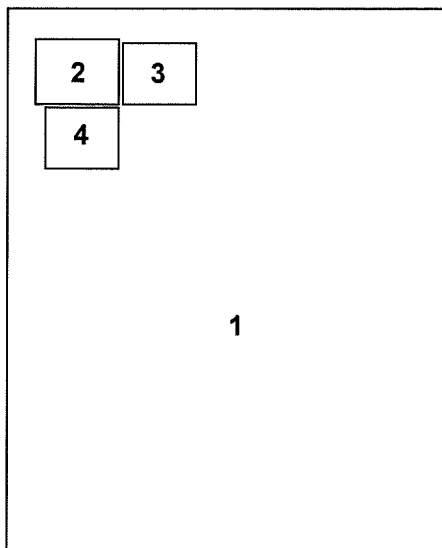
Our Vision

To enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources.

Our Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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Cover Photos:

1. Along the Archimedes Ridge in the Utukok River Uplands of the National Petroleum Reserve-Alaska.
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2. Winter petroleum exploration, National Petroleum Reserve-Alaska. Photo by NSSI
3. Polar Bear, North Slope, Alaska.
4. Two newly born caribou calves in the Utukok River Uplands of the National Petroleum Reserve-Alaska.
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United States Department of the Interior

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FEB - 5 2013

In Reply Refer To:
2361 (AK9100)

Dear Reader:

The enclosed Errata Sheet documents minor changes to the text of the National Petroleum Reserve, Alaska (NPR-A) Final Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) that was released in December 2012. These corrections reflect edits that the BLM intended to make to the Draft IAP/EIS, but were inadvertently overlooked when the BLM completed and printed the Final IAP/EIS, and were discovered after the release of the Final IAP/EIS. We have utilized "tracked changes" (underlined additions and crossed-out deletions) for some of the changes where we felt it would assist the reader to more easily identify the corrections. There are no changes to the plan or significant new circumstances or information identified in this Errata Sheet that affect the analysis and conclusions in the NPR-A Final IAP/EIS. This Errata Sheet is part of the administrative record for the IAP/EIS.

These corrections will also be posted on the BLM-Alaska website at www.blm.gov/ak.

For additional information or clarification regarding the attached Errata Sheet, please contact Serena Sweet, Supervisory Planning and Environmental Coordinator, at (907) 271-4543.

Sincerely,

Bud C. Cribley
State Director

Attachment: Errata Sheet

Please note the following changes to the NPR-A Final IAP/EIS.

Volume 2, Section 4.1

The first bullet to page 1 should include the following change:

Direct and indirect impacts - see sections 4.3, 4.4, 4.5, ~~4.5~~4.6, and 4.7.

Volume 2, Table 4-10

The table on page 63 should include the following change:

Alternative	A	B <u>1</u>	B-2	C	D
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Volume 2, Section 4.3.1

This section shall include the following change:

This section qualitatively describes the potential air quality impacts associated with Alternative A in the Draft IAP. ~~The BLM is preparing an air emissions inventory and a dispersion modeling analysis to refine this qualitative analysis.~~

Volume 2, Section 4.3.1.1

This section shall include the following change in the last sentence:

These activities would have a transitory effect on local air quality (~~2008 Northeast NPR-A Supplemental IAP/EIS~~USDOI BLM 2008).

Volume 2, Section 4.3.1.2

This section shall include the following changes in the second paragraph:

The following air pollutants would be produced during activities associated with oil and gas exploration and development under all alternatives: nitrogen oxides, sulfur dioxide, particulate matter (PM, including both PM_{2.5} and PM₁₀), hazardous air pollutants, volatile organic compounds, and greenhouse gases such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), and other trace gases. Fire, increased shipping, methane hydrate sources, melting ice, submarine landslide, and permafrost contribute to methane releases. Methane is also released during the oil and gas extraction process. Combustion emissions may be assumed ~~to be~~ primarily PM_{2.5}, while fugitive dust emissions may be assumed ~~to be~~ primarily PM₁₀. The types and amounts of air pollutants generated vary according to the phase of activity.

This section shall include the following changes in the fifth paragraph:

During the production phase, the primary source of emissions would be power generation for heating, oil pumping, and water injection. The emissions would consist primarily of carbon monoxide and nitrogen oxides, with smaller amounts of particulate matter. There would also be ~~minimal~~ evaporative losses of volatile organic compounds from oil/water separators, pump and compressor seals, valves, and storage tanks. Venting and flaring could be an intermittent source of nitrogen oxides, volatile organic compounds, and possibly sulfur dioxide (USDOI BLM 2008~~2008 Northeast NPR-A Supplemental IAP/EIS~~).

The following changes shall be included in the section labeled *Effects of Air Pollution*:

As presented in Table 3–2 in Volume 1, ambient air quality standards have been established for seven air pollutants in order to prevent significant air quality impacts from occurring, ~~and thus~~ protecting human health and welfare. Under the State Implementation Plan, the Alaska Department of Environmental Quality Conservation has jurisdiction for regulating and

permitting air quality emissions within the NPR-A. Operators would be required to meet Alaska Department of Environmental ~~Quality's~~Conservation's requirements for air emissions, including obtaining construction and operating permits. All BLM activities (whether directly or through use authorizations), must comply with all applicable air quality laws, regulations, standards, increments, and implementation plans.

In general, direct and indirect air quality effects could be short term (hours, days, or weeks), long term (seasons or years), local, or regional (North Slope). ~~Ambient~~ Air quality concentrations could increase during construction activities and during production operations. This could result in a decrease in local visibility and an increase in atmospheric deposition.

Once site-specific projects are submitted for authorization, potential air quality impacts could be reduced by limiting the emission sources (fuel characteristics, engine specifications, etc.), spacing (such as separating concurrent drilling operations to reduce combined impacts), limiting the season and timing of operations (to enhance favorable dispersion conditions), and requiring specific control measures (road watering, low nitrogen oxides, flares, etc.). The NEPA Air Quality Memorandum of Understanding (signed June 23, 2011; hereafter Interagency MOU among the U.S. Department Of Agriculture, U.S. Department Of The Interior, and U.S. Environmental Protection Agency, Regarding Air Quality Analyses And Mitigation For Federal Oil And Gas Decisions Through The National Environmental Policy Act Process) provides for consideration of mitigation measures such as those identified above. The BLM will consider mitigation measures throughout the NEPA process for projects in NPR-A.

Development and production activities can also produce fugitive dust emissions (primarily as PM₁₀). Fugitive dust occurs primarily during the summer months due to driving on unpaved roads. Vehicles can also track out fine material from gravel mining operations in the winter and summer months. Potential control measures include limiting vehicle speeds, and treating problematic road sections with surfactants or water.

Well closure, abandonment, and reclamation activities would emit air pollutants similarly to those during development (construction), since similar vehicles and other emission sources would be used. Impacts could be minimized by leaving gravel on-site, limiting the amount of transport. Once reclamation is complete, production facilities would no longer impact air quality in the planning area (~~USDOI BLM 2008~~2008 Northeast NPR-A Supplemental IAP/EIS).

~~Air quality impacts from Alternative A would contribute some greenhouse gas emissions, though a miniscule amount in the global context. The assessment of greenhouse gas emissions and climate change is in its formative phase. While it is not possible to know with confidence the impact of increased greenhouse gas emissions due to proposed operations within the planning area on global climate change, it is certain that it would contribute a very small amount to climate change.~~

Direct and Indirect Climate Change Effects

Scientific evidence suggests increasing atmospheric concentrations of greenhouse gases (GHGs) are causing Earth's climate to warm. Human activities such as the burning of fossil fuels and land use changes release GHGs including carbon dioxide (CO₂), methane (CH₄), and other heat-trapping gases. The Intergovernmental Panel on Climate Change (IPCC) recently concluded that "Warming of the climate system is unequivocal..." and "Most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic (or human-caused) greenhouse gas concentrations" (IPCC 2007).

Climate change is a global problem since anthropogenic GHGs tend to be long-lived and globally dispersed in the atmosphere. Global mean surface temperatures increased by 1.8°F from 1890 to 2006. It is anticipated that global average surface temperatures will increase by 2.5 to 10°F above 1990 levels by 2100 (IPCC 2007). However, climate change will impact regions differently and increases in temperature will not be equally distributed. Warming during the winter is expected to be greater than during the summer and the northern hemisphere is expected to warm more than the southern hemisphere. Average summer temperatures in the NPR-A are predicted to increase by 3°F by the 2040s and 5 – 6°F by the 2090s. Average winter temperatures may increase by 10 – 11°F by the 2040s and as much as 18°F by the 2090s (Scenarios Network for Alaska Planning 2011).

Air quality impacts from Alternative A would contribute some greenhouse gas emissions, including carbon dioxide, methane, and other gases. Although the cumulative effects of global greenhouse gas emissions are well understood, our current scientific understanding of climate change does not allow us to relate specific sources of GHG emissions to any specific climate-related regional or global impacts. Further, since the specific effects of the proposed action, which may or may not contribute to climate change, cannot be determined, it is equally impossible to determine whether any particular action will lead to significant climate-related environmental effects. While it is not possible to know with confidence the impact of increased greenhouse gas emissions due to proposed operations within the planning area on global climate change, the total GHG emissions would be minuscule in comparison with total global emissions and the contribution to climate change would be very small.

Actions occurring under Alternative A would also release particulate matter (PM). Fine particles (PM_{2.5}) can exist in the atmosphere for several weeks and have local short-term impacts on climate. Light-colored particles reflect and scatter incoming solar radiation, having a mild cooling effect, while dark-colored particles (often referred to as “soot” or “black carbon”) absorb radiation and have a warming effect. The IPCC (2007) has recognized the potential for “black carbon” (light-absorbing carbon) to deposit on snow and ice, altering the albedo, and enhancing melting. However, there is considerable uncertainty regarding the net impact of atmospheric particles on climate. It is not currently possible to associate the impact of PM emissions from any particular activity on global climate change, although the total PM emissions would be minuscule in comparison with total global emissions and the contribution to climate change would be very small.

Volume 2, Section 4.3.1.3

This section shall include the following changes:

Required Operating Procedure A-9 requires adoption of the use of ultra-low sulfur diesel fuel as defined in an industry and the State of Alaska agreement or in new federal regulations. This provision, however, has been superseded, so all potential air quality impacts from site-specific development activities would be limited based on air quality permits issued by the Alaska Department of Environmental ~~Quality~~Conservation and EPA, including applicable control technologies (Elson 2011).

Required Operating Procedure A-10 would provide substantial protection for air quality within the NPR-A. Pre- and post-project ambient air quality monitoring would provide an understanding of air quality in the NPR-A relative to standards and thresholds. Air quality

modeling would provide an estimate of potential post-project impacts and could provide guidance on the most effective pollution control strategies to employ once the project is completed.

Consistent with 40 CFR Part 69, beginning on December 1, 2010, the diesel fuel that is designated for use in rural Alaska for all on-road and non-road vehicles and equipment, locomotive, and marine, will be ultra-low sulfur diesel fuel (15 parts per million sulfur). Ultra-low sulfur diesel ~~became~~was designated for use for on-road vehicles in urban Alaska on October 15, 2006; for non-road vehicles and equipment on December 1, 2010; and will be designated for locomotive and marine vehicles on December 1, 2012. Urban Alaska is defined as those geographical areas of Alaska designated by the State of Alaska as being accessible by the Federal Aid Highway System. Areas not accessible by the Federal Aid Highway System are considered rural (Elson 2011).

As trace constituents in diesel fuel, sulfur compounds may cause adverse air quality impacts through formation of sulfate particulate matter (affecting visibility) and deposition of acidic aerosols. These impacts would be reduced significantly by utilizing ultra-low sulfur diesel fuel. In addition, ultra-low sulfur diesel fuels burn cleaner and produce less light absorbing carbon particulate matter (soot, also called black carbon). When burned, ultra-low sulfur diesel emissions are much lower than those generated by previous fuels, reducing fine particulate (soot), sulfuric acid, and sulfate (visibility) impacts.

Volume 2, Section 4.3.1.4

This section shall include the following changes:

Exploration, development, and production activities are expected to cause local and temporary increases in the concentrations of criteria pollutants, hazardous air pollutants (HAPs), volatile organic compounds (VOCs), and greenhouse gases (GHGs). Emissions and resulting air quality impacts from Alternative A are expected to be lower than alternatives C and D due to less federally owned subsurface being available for oil and gas leasing, and higher than ~~A~~alternatives B-1 and B-2 due to more federally owned subsurface being available for oil and gas leasing.

The BLM prepared an air emissions inventory and a dispersion modeling analysis. (See Appendix H.) The analysis was limited by the availability of data and did not take into account mitigation measures and advancements in technology.

Modeling focused on potential air pollutant impacts to villages in the NPR-A, where all residents of the area reside, and visibility and deposition impacts on the Arctic National Wildlife Refuge and the Gates of the Arctic National Park and Preserve, both of which are federal Class II areas under the Clean Air Act. Modeling for impacts on villages was done for Nuiqsut and Atkasuk as representative of villages near the coast and inland. Impacts to these “receptors” are most likely to occur from oil and gas development near the villages (modeled at a distance of 6 miles) or near the eastern or southeastern part of the NPR-A. The modeling analysis, however, necessarily relied upon seasonally limited data. The paucity of air quality baseline data for northern Alaska limited analysis to, in some cases, less than three years of data for analyzing impacts to villages, and provided only one full year and three years of mid-summer to early winter data for analysis of visibility and deposition impacts to the refuge and park. In addition, the modeling did not factor in mitigation that BLM and other permitting agencies will require of permittees, or potential advances in technology in the coming decades that could further restrict emissions; as noted in section 4.2.1.2, most development in NPR-A would not occur for more than twenty years.

Because of these limitations, the modeling results were not incorporated into the IAP/EIS's analysis of air quality impacts. Additionally, the modeling results do not constitute significant new circumstances or information relevant to environmental concerns (40 CFR 1502.9), and thus do not require that the BLM prepare a supplemental EIS. Moreover, 40 CFR 1502.22 does not apply because there are no reasonably foreseeable significant adverse air quality impacts, and even if there were the modeling results would not be essential to making a reasoned choice among the alternatives because they would not reflect differences in impacts among the alternatives due to the fact that BLM-managed lands within approximately 35 miles of Nuiqsut and Atqasuk or close to the eastern and southeastern boundary of the NPR-A along the Colville River are available for leasing under all alternatives.

Volume 2, Section 4.4.1.2

This section shall include the following change in the third paragraph:

Well closure, abandonment, and rehabilitation activities would emit air pollutants similarly to those during development (construction), since similar vehicles and other emission sources would be used. Because closure activity would not occur at a single location for any substantial length of time, the impact of air emissions at any single location would likely be minor and short term. Impacts could be minimized by leaving gravel on-site, limiting the amount of transport. Once reclamation is complete, production facilities would no longer impact air quality in the planning area (USDOI BLM 2008).

Volume 2, Section 4.4.1.4

This section shall include the following as the second paragraph:

For a discussion of air quality modeling analyses, see section 4.3.1.4 and Appendix H. The BLM modified best management practice A-10 in the Final IAP/EIS to better address potential air quality impacts.

**National Petroleum Reserve-Alaska
Integrated Activity Plan**

Record of Decision



Ken Salazar
Secretary of the Interior

FEB 21 2013

Date

Prepared by:
U.S. Department of the Interior
Bureau of Land Management
Anchorage, Alaska

**National Petroleum Reserve-Alaska
Integrated Activity Plan**

Record of Decision

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SUMMARY

This Record of Decision (ROD) documents the Secretary of the Interior's decision regarding the Bureau of Land Management's (BLM) future management of the National Petroleum Reserve-Alaska (NPR-A; Reserve; Petroleum Reserve). The plan adopted by this decision (see Chapter 1) balances the Secretary's responsibilities to provide for oil and gas leasing and to protect and conserve the important surface resources and uses of the Reserve.

This decision is reached after an extensive outreach effort that ensured that all voices were heard and that BLM benefited from a wide variety of perspectives. Early in the process the BLM invited the North Slope Borough (NSB), the State of Alaska, and federal agencies with expertise relevant to NPR-A's management to join as cooperating agencies.¹ The NSB, the State, the U.S. Fish and Wildlife Service, and the U.S. Bureau of Ocean Energy became cooperating agencies. These agencies were asked for their suggestions for alternatives, reviewed in-house drafts of the Draft and Final Integrated Activity Plan/Environmental Impact Statement (IAP/EIS), and, in some cases, drafted portions of the impact analysis. The cooperating agencies' contributions to the plan are greatly appreciated. The BLM as the lead agency for the plan is responsible for the alternatives and the development of the ultimate decision in this ROD.

In addition to inclusion of cooperating agencies' input into the plan, the BLM initiated tribal consultation early in the planning process with tribes in northwest Alaska whose members might be impacted. This included tribes some distance from NPR-A that harvest the Western Arctic Herd of caribou for subsistence. The BLM also conducted public scoping meetings and meetings to take comments on the Draft IAP/EIS in northwestern Alaska, Fairbanks, and Anchorage, in addition to taking comments online, by fax, and through the mails. More informally, BLM met with representatives of interested parties, including local and state governments, tribes, Alaska Native corporations, and industry and environmental organizations. Finally, following publication of the Final IAP/EIS, Department and BLM leaders traveled to North Slope villages to conduct additional meetings with local governments, Alaska Native corporations, and tribal entities to receive additional input.

¹ The State of Alaska withdrew as a cooperating agency on September 12, 2012.

This decision makes approximately 11.8 million acres available for oil and gas leasing. It also makes lands available for application for pipelines and other infrastructure necessary for owners of offshore leases in the Chukchi and Beaufort Seas to bring oil and gas across the NPR-A to the Trans-Alaska Pipeline System (TAPS) and similar gas related infrastructure that could be built in the years ahead. While providing these opportunities for oil and gas development, the plan provides important protections for surface resources. Approximately 11 million acres, including approximately 3.1 million acres within the Teshekpuk Lake Special Area, are not made available for oil and gas leasing under the plan, thereby protecting critical areas for sensitive bird populations from all seven continents and for the roughly 400,000 caribou found in the Teshekpuk Lake and Western Arctic Caribou Herds - herds important for subsistence users in over forty villages in northwest Alaska. The plan also expands the Teshekpuk Lake Special Area from 1.75 million acres to 3.65 million acres and the Utukok River Uplands Special Area from 3.97 million acres to 7.06 million acres, and creates a new 107,000-acre Peard Bay Special Area. Taken together, the provisions of the plan provide important protections for areas critical to numerous subsistence species - calving and insect relief areas of both caribou herds; riverine, lake, and coastal fish habitat; nesting and breeding areas for tens of thousands of birds; and bays, inlets, and coastlines important for marine mammals - as well as the coastal waters and river routes critical for North Slope residents to access hunting, fishing, berry picking, and trapping grounds.

This decision establishes performance-based stipulations and best management practices, which apply to oil and gas and, in some cases, to non-oil and gas activities within the NPR-A (see Appendix A), and requires studies and monitoring.

The decision also adopts a formal approach to provide for a continuing dialogue with local communities, tribal organizations, and Native corporations on the North Slope through the establishment of the NPR-A Working Group. The NPR-A Working Group will ensure that BLM's land managers engage in a continuing dialogue with North Slope residents, understand their economic, subsistence, and wider social interests in activities in NPR-A, and gather scientific and traditional ecological knowledge related to key issues that arise during implementation of the plan and as the BLM considers proposed activities in the NPR-A. Such matters may include leasing activities, exploration programs, proposed oil and gas

developments, potential pipelines supporting offshore oil and gas development, subsistence and wildlife issues, and related matters.

The decision reflects the Preferred Alternative in the NPR-A Final IAP/EIS issued in December 2012, but includes modifications and clarifications (see Appendix B).

Due to the dynamic nature of public land resources it is necessary that plans such as this are maintained, amended, and, when necessary, revised. This plan will remain in place until the agency determines that it is appropriate to adopt a different approach to management of the Reserve.

1. DECISION

The plan described in this ROD is hereby adopted for future management of the NPR-A. The plan includes decisions regarding:

- *Areas designated for oil and gas leasing, for pipelines and other infrastructure, and for special protections:* These land allocations include making areas available or unavailable for oil and gas leasing, identifying areas in which nearly all new non-subsistence permanent infrastructure² would be prohibited or in which applications for pipelines and other non-subsistence infrastructure would be consistent with the plan, enlarging existing or creating new Special Areas and modifying the purposes of existing Special Areas, and committing to manage twelve rivers or river segments to protect their free flow, water quality, and outstandingly remarkable values,
- *Stipulations and best management practices:* The stipulations and best management practices will regulate permitted activities in NPR-A to meet resource and use objectives and thereby mitigate impacts of those activities.
- *Studies and monitoring:* Studies and monitoring will be done to 1) ensure lessees and permittees comply with applicable requirements, 2) assess the effectiveness of protective measures to meet objectives, and 3) provide updated scientific, cultural, and technological data and knowledge needed to adapt management decisions to changing conditions and circumstances. Such information would be important to adapt management if protective measures, including but not limited to land allocations, stipulations, and best management practices, are not meeting their objectives.
- *Establishment of the NPR-A Working Group:* The NPR-A Working Group is to ensure that land managers have the benefit of local knowledge, an understanding of local concerns, and the recommendations of local residents and institutions and the input of other

² Non-subsistence permanent infrastructure includes all structures and improvements that are not built for use by subsistence hunters, trappers, fishers, berry-pickers (cabins, tent platforms, drying racks) to facilitate subsistence activities and that are not ephemeral, such as snow or ice roads. Within NPR-A anticipated non-subsistence permanent infrastructures include pipelines, gravel drilling pads, and other improvements built to support commercial oil and gas activities; for a more expansive list of such facilities, see the definition of “permanent oil and gas facilities” in the definition section of Appendix A.

permitting agencies and agencies with relevant expertise on an ongoing basis.

Areas Designated for Oil and Gas Leasing, for Pipelines and Other Infrastructure, and for Special Protections

This decision makes approximately 11.8 million acres of the approximately 22.8 million acres of subsurface managed by BLM in the NPR-A available for oil and gas leasing. (See Map 1; maps appear at the end of the ROD.) Of the 11.8 million acres, 1.57 million acres in the northwestern part of the Reserve would not be available for leasing until January 22, 2014 when a 10-year deferral established in the Northwest NPR-A IAP ROD expires; this plan preserves that previous deferral.

Under this decision approximately 11 million acres, comprising a large majority of lands within Special Areas, and some Beaufort Sea waters in and near Dease Inlet and Barrow, are not available for oil and gas leasing in order to protect and conserve important surface resources and uses in these areas. (Map 1)

Under the plan, oil and gas infrastructure, including pipelines and other infrastructure necessary for offshore development, would be allowable in over 14 million acres, including in much of the areas designated as Special Areas. (See Figure 1.) The plan prohibits most new non-subsistence permanent infrastructure in approximately 8.4 million acres of the 11 million acres that would not be available for oil and gas leasing. (Map 1) Of these 8.4 million acres, approximately 1.1 million acres encompasses Teshekpuk Lake and lands surrounding the lake, habitat of special importance for nesting, breeding, and molting waterfowl and for the Teshekpuk Lake Caribou Herd. The remaining approximately 7.3 million acres in which most new non-subsistence permanent infrastructure is prohibited lies in the southwestern part of the NPR-A. This territory provides critical calving and summer movement areas for the Western Arctic Herd. In these areas, the only permanent non-subsistence infrastructure that would be allowed is infrastructure in support of science and public safety. For example, small research facilities and unoccupied navigation aids could be allowed on a case-by-case basis following evaluation of project proposals. In addition, construction, renovation, or replacement of facilities on the existing gravel pads at Camp Lonely and Point Lonely may be permitted if the facilities will promote safety or environmental protection. Lands in which new non-

subsistence permanent infrastructure is not prohibited are available for application for permits for such infrastructure, including infrastructure in support of offshore development. A decision on infrastructure that will be permitted in support of offshore development will be made following a rigorous, multi-agency NEPA review, which will benefit from expertise from a wide range of specialists, including but not limited to biologists; subsistence, cultural, and paleontological specialists; soils and water scientists; geologists; engineering subject matter experts; economists; project estimators; and respected traditional knowledge holders to provide sound consideration of project routes and requirements. It must be emphasized that no provision of this decision, except the prohibition of new non-subsistence infrastructure (illustrated in Fig. 1), directly or indirectly prohibits pipelines or other infrastructure in NPR-A in support of offshore development in the Chukchi or Beaufort seas. Any oil and gas infrastructure built in NPR-A would be required to minimize the impacts of the development footprint consistent with Stipulation E-5, which requires consideration of sharing and collocation of facilities along with other strategies to minimize the footprint of development.

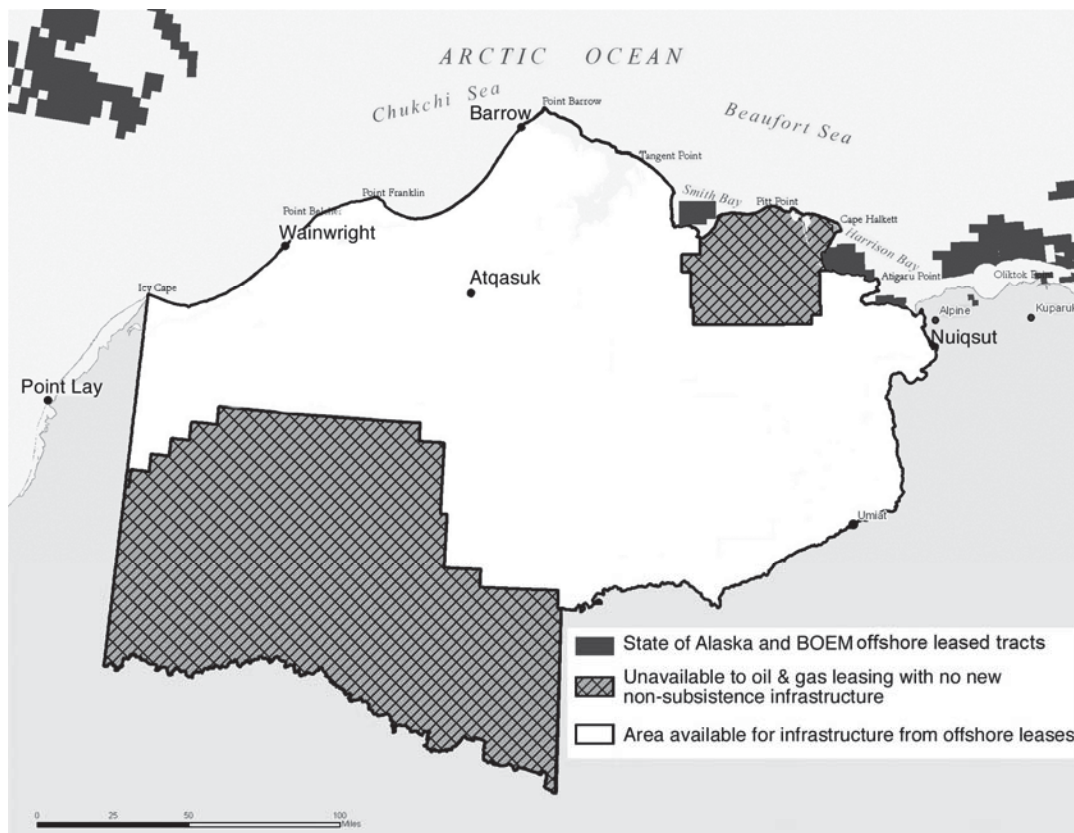


Fig. 1 Pipelines and other infrastructure in support of offshore development could be located in NPR-A except in crosshatched lands.

The plan also expands the area and number of Special Areas and broadens the purpose of two of the existing Special Areas. (See Map 1.) The plan adds approximately 1.9 million acres to the Teshekpuk Lake Special Area to protect caribou calving and insect-relief areas and waterbird and shorebird breeding, molting, staging, and migration habitats. The purpose of the Teshekpuk Lake Special Area is expanded to include the protection of important caribou and shorebird habitat while continuing to protect waterbird habitat, which was the original purpose for the Special Area³.

The plan adds approximately 3.1 million acres to the Utukok River Uplands Special Area to more fully encompass prime calving and insect-relief habitat within the NPR-A and creates a 107,000-acre Peard Bay Special Area to protect haul-out areas and nearshore waters for marine mammals and a high use staging and migration area for shorebirds and waterbirds. This decision does not change the boundaries of the Colville River and Kasegaluk Lagoon Special Areas, but it modifies the purpose of the former to protect all raptors, rather than the original intent of protection for arctic peregrine falcons.

The plan commits the BLM to protect the free flow, water quality, and outstandingly remarkable values of the rivers and river segments listed in Table 1 and depicted on Map 1 and an area approximately one-half mile from the banks of these rivers to protect the associated river values. This plan decision does not recommend these rivers for Wild and Scenic River designation, but by committing the BLM to protect the rivers, it preserves Congress's option to pursue Wild and Scenic River designation in the future. Nothing in this decision's commitment to protect these rivers, however, would block essential pipeline and other essential infrastructure crossings or make such crossings impracticable or non-economic⁴.

³ The notice designating the Teshekpuk Lake Special Area (*Federal Register*, June 3, 1977) noted "the large number of ducks, geese, and swans" and the importance of the area for these and other waterbirds. The change in purpose to include shorebirds clarifies that these species are encompassed in the protections afforded by the Teshekpuk Lake Special Area. For a description of waterbirds and shorebirds in the NPR-A, see the Final IAP/EIS sections 3.3.5.3 through 3.3.5.6.

⁴ The commitment to protect the free flow, water quality, and outstandingly remarkable values of these twelve rivers constitutes a river protection separate from those identified in the various stipulations and best management practices, including Stipulations E-2 and K-1 and Best Management Practices E-6 and E-14. These stipulations and best management practices also would not block essential pipelines and other infrastructure from crossing rivers.

Table 1: Rivers and River Segments and Values to be Protected

River/Creek	Outstandingly Remarkable Values
Awuna River	Wildlife, scenic, cultural, geologic, subsistence, recreational
Carbon Creek	Recreational, wildlife, scenic, cultural, subsistence
Colville (headwaters downstream in which the river and both banks are within NPR-A)	Wildlife, scenic, cultural, geologic, subsistence
Driftwater Creek	Wildlife, scenic, cultural, geologic, subsistence
Etivluk (downstream from confluence with Nigu)	Recreational, wildlife, scenic, cultural
Ipnavik	Wildlife, scenic
Kiligwa	Wildlife, scenic, cultural, geologic, subsistence
Kokolik (within NPR-A)	Recreational, wildlife, geologic, cultural, subsistence
Kuna	Wildlife, scenic
Nigu (within NPR-A)	Recreational, wildlife, scenic, cultural
Nuka	Wildlife, scenic
Utukok (within NPR-A)	Recreational, wildlife, scenic, cultural, subsistence

Finally, the plan adopts decisions regarding visual resource management and off-highway vehicle use designations. In brief, these measures are:

- Visual Resource Management: manage areas in which new non-subsistence infrastructure is prohibited as VRM II, approximately 6 million acres near certain rivers and waterbodies as VRM III (see Table 2-2 in the Final IAP/EIS for details), and the remaining approximately 8.4 million acres as VRM IV (see Map 3)
- Off-highway vehicle use: year-round use of OHVs to support subsistence activities is allowed, casual or non-subsistence travel is limited to vehicles with a gross vehicle weight rating of 2,000 pounds or less and to times when frost and snow cover is sufficient to protect the tundra, and inter-village travel is limited to times when frost and snow cover sufficient to protect the tundra (see Table 2-2 in the Final IAP/EIS for details).

Stipulations and Best Management Practices

This decision adopts the performance-based stipulations and best management practices listed in Appendix A. Map 2 illustrates the geographic scope of some of these stipulations and best management practices. These stipulations and best management practices are derived from those listed for the Preferred Alternative in the Final IAP/EIS. This decision makes minor modifications and clarifications in the language of

stipulations and best management practices listed in the Preferred Alternative in the Final IAP/EIS. These modifications and clarifications are described in Appendix B.

Studies and Monitoring

Three categories of studies and monitoring are required by this ROD:

1. *Baseline studies: Studies prior to activities to better mitigate impacts associated with the activities.*

Project proponents shall be responsible for funding baseline studies to provide BLM decision-makers with sufficient information to make informed decisions on a project or series of projects. The type and scale of such studies will be determined by BLM based on the characteristics of the proposed project and location. The BLM will work with operators to coordinate any necessary surveys to ensure that consistent methods are used and that surveys are not unnecessarily duplicative. Some such studies are described in Best Management Practices A-10, A-11, C-1, E-11, E-12, E-13, E-14, E-18, K-4a, K-4b,, K-5, and L-1 and in Stipulation K-11; additional baseline information may also be required depending upon the proposed project.

2. *Oversight monitoring: Monitoring to ensure compliance with applicable requirements.*

The BLM will conduct monitoring to ensure that lessees’/permittees’ plans for activities and implementation of those plans conform to the relevant requirements. Project proponents may be responsible for funding oversight monitoring. Commonly oversight monitoring will require:

- review of planning documents,
- field visits prior to oil and gas activities to ensure compliance with requirements at the on-the-ground preparation stage for activities, construction, operational start-ups, and abandonment activities (e.g., check staking of ice roads or developments to ensure compliance),
- presence in the field during activities to ensure compliance,
- follow-up field visits to ensure that any required clean-up and abandonment activities were in compliance with requirements.

3. *Effectiveness monitoring: Monitoring to evaluate the effectiveness of project designs and mitigation measures and thereby guide adaptive management.*

Project proponents shall be responsible for funding monitoring, by private or government parties, to assess the effectiveness of project designs and required mitigations in protecting resources. Project proponents may also be required to develop a plan, approved by BLM, for adaptive management programs associated with their project. As with baseline monitoring, the type and scale of such studies will be determined based on the characteristics of the proposed project and location, and the BLM will work with project proponents to coordinate any necessary surveys to ensure that consistent methods are used and that surveys are not unnecessarily duplicative.

In addition, in cooperation with other federal, State, and North Slope Borough resource management agencies, the BLM will conduct, subject to available funding, studies, such as the inventory and monitoring of resource populations and conditions. These studies may assess the health of biological resources, the location and significance of other resources, and the effectiveness of management practices in protecting these resources. The scope of these studies will reflect the level of impacting actions allowed and the protective measures imposed under the plan adopted in this ROD.

If studies and monitoring reveal that circumstances or conditions have changed, the BLM may re-evaluate its management. This re-evaluation will consider whether the impacts of a proposed amendment is within the scope of the existing NEPA analysis or if it will require further analysis under NEPA and ANILCA § 810.

Studies and monitoring undertaken to provide baseline data or to monitor effectiveness of mitigation measures must meet the approval of the authorized officer. As the authorized officer determines to be appropriate, the data collection process and product shall be consistent with standards established by BLM's Assessment, Inventory, and Monitoring program.

The plan also adopts decisions regarding the inventory of gravel resources and public health consultation described for Alternative B-2 in the Final IAP/EIS in Table 2-2. In brief, these measures are (see Table 2-2 in the

Final IAP/EIS for details):

- Gravel inventory: as funds are available, the BLM will develop a plan of exploration and evaluation of gravel resources.
- Public health consultation: the BLM will consult with the North Slope Borough Health Department, the Alaska Department of Health and Social Services, the Alaska Native Tribal Health Consortiums and other agencies with recognized expertise in Alaska Native public health and health impact assessments on major development proposals.

Establishment of the NPR-A Working Group

In comments on the Draft IAP/EIS and in consultations the Department and BLM conducted following publication of the Final IAP/EIS, local governments, Native corporations, and tribal entities expressed concerns on how local residents and entities would be involved in on-going management decisions and proposed activities (e.g. oil and gas leasing) and developments (e.g. pipelines) in the Reserve. To provide for meaningful, regular input by local communities to the on-going implementation of the NPR-A Integrated Activity Plan, the BLM will establish the National Petroleum Reserve-Alaska (NPR-A) Working Group consisting of representatives of North Slope local governments, Native corporations, and tribal entities. The NPR-A Working Group will meet on a regular basis and provide BLM information and recommendations on a range of issues associated with future implementation of the plan, including oil and gas leasing, land use conflicts, exploration, and infrastructure projects supporting onshore and offshore oil and gas development, such as production facilities and pipelines. The Working Group also will be a forum to collect additional scientific information and traditional knowledge about wildlife populations and needs, and it can inform potential adjustments to the boundaries of special areas including, for example, potential future adjustments to the southernmost boundary of the Teshekpuk Lake Special Area. Similarly, if wildlife migration patterns are altered by future development in the NPR-A, the Working Group could provide important feedback on areas where additional protection of surface values should be considered.

It is recognized that both natural and man-made changes will occur over the life of this plan, and that changes to the management prescriptions and designations for the NPR-A may be warranted in the future. The Working Group can be a forum for discussion of, and recommendations for, possible

plan amendments as well as more immediate actions that the BLM and other parties can take.

It is also recognized that there are other agencies and entities that have responsibilities for land and resource uses and management affecting the NPR-A. The BLM and this Working Group should work closely with, and may integrate with, the NPR-A Subsistence Advisory Panel, which was established in the Northeast NPR-A Integrated Activity Plan. It also should work closely with the North Slope Science Initiative. Other Department of the Interior agencies, including the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and the Fish and Wildlife Service are directed to participate in NPR-A Working Group meetings when appropriate, particularly when actions outside of NPR-A affect or are otherwise related to the management of the Reserve (either as actions related to BLM decision-making or having direct, indirect, or cumulative effects on NPR-A resources). Similarly, the BLM should invite other federal and state agencies, such as the National Oceanic and Atmospheric Administration and the Alaska Department of Natural Resources, to participate on issues with which they have responsibilities.

2. ALTERNATIVES

The NPR-A Final IAP/EIS presented five alternatives that were analyzed in detail. The major land allocations associated with the five alternatives included:

Alternative A: No Action

Alternative A is the no-action alternative and comprises decisions established in the records of decision for the Northwest NPR-A IAP (January 22, 2004) and the Northeast NPR-A Supplemental IAP (July 16, 2008) as well as decisions reached as part of the Colville River Special Area Management Plan (July 18, 2008). The decisions described in this alternative constituted a continuation of the BLM's existing management practices in the NPR-A. Except for certain provisions of the Colville River Special Area Management Plan, no current BLM planning decisions are effective for the portions of the NPR-A outside of the Northeast and Northwest NPR-A planning areas.

Under this alternative, approximately 57 percent (13 million acres) of the NPR-A's approximately 22.8 million subsurface acres could be offered in future oil and gas lease sales, though approximately 1.57 million acres of the available lands in the northwestern part of the Reserve would remain deferred from leasing until 2014 and approximately 425,000 acres north and east of Teshekpuk Lake would remain deferred from leasing until 2018. Teshekpuk Lake and its islands and more than 9 million acres in the southwestern part of the NPR-A would not be available for leasing.

Alternative B-1

Alternative B-1 would make approximately 48 percent (11 million acres) of NPR-A's subsurface available for oil and gas leasing, though the deferral until 2014 for lands in the northwestern part of the Reserve would be honored. (The deferred lands near Teshekpuk Lake would be classified as unavailable under this alternative.) Lands that would not be available for oil and gas leasing would also not be available for new non-subsistence permanent infrastructure. Alternative B-1 would create a 1.6 million acre Peard Bay Special Area and enlarge the Teshekpuk Lake, Kasegaluk Lagoon and Utukok River Uplands Special Areas; total lands within Special Areas

would increase from 8.3 million acres to 15.5 million acres. The alternative would recommend the addition of twelve rivers to the National Wild and Scenic Rivers System.

Alternative B-2: The Preferred Alternative

Alternative B-2 was the Preferred Alternative and the basis for this ROD. The Preferred Alternative would make approximately 52 percent (11.8 million acres) of NPR-A's subsurface available for oil and gas leasing, including some lands closest to existing leases centered on the Greater Mooses Tooth and Bear Tooth units and Umiat. Like Alternative B-1, it would preserve the deferral in northwestern NPR-A established in the January 2004 Northwest NPR-A IAP ROD and make the lands previously deferred near Teshekpuk Lake unavailable for oil and gas leasing. It would make lands available for application for pipelines and other infrastructure necessary for owners of offshore leases in the Chukchi and Beaufort Seas to bring oil and gas across NPR-A to the Trans-Alaska Pipeline System (TAPS) and similar gas related infrastructure that could be built in the years ahead.

While providing these opportunities for oil and gas development, the alternative provides important protections for surface resources. Approximately 11 million acres would not be offered for oil and gas leasing under Alternative B-2, comprising a large majority of lands within Special Areas, and some Beaufort Sea waters in and near Dease Inlet and Barrow, thereby protecting critical areas for sensitive bird populations from all seven continents and for the roughly 400,000 caribou found in the Teshekpuk Lake and Western Arctic Caribou Herds. Of these lands, new non-subsistence infrastructure would not be allowed on 1.1 million acres near Teshekpuk Lake or in 7.3 million acres in southwestern NPR-A. In addition, the Teshekpuk Lake Special Area would be expanded from 1.75 million acres to 3.65 million acres, the Utukok River Uplands Special Area would be enlarged from 3.97 million acres to 7.06 million acres, and the alternative would create a new 107,000-acre Peard Bay Special Area.

Alternative B-2 would not recommend any rivers for addition to the National Wild and Scenic Rivers System, but under the alternative, the BLM would manage the twelve rivers identified in Alternative B-1 for such a recommendation to protect their free flow, water quality, and outstandingly remarkable values. In areas where pipelines and other essential

infrastructure may be authorized, crossings could be allowed consistent with Stipulations E-2 and K-1 and Best Management Practices E-6 and E-14.

Alternative C

Alternative C would make approximately 76 percent (17.9 million acres) of NPR-A's subsurface available for oil and gas leasing, though it would honor the deferrals described in Alternative A. It would increase the total acres in Special Areas from the current 8.3 million acres to 9 million acres, creating a 107,000-acre Peard Bay Special Area and adding approximately 120,000 acres to the Teshekpuk Lake Special Area and 470,000 acres to the Utukok River Uplands Special Area. Alternative C would recommend the addition of three rivers to the National Wild and Scenic Rivers System.

Alternative D

Alternative D would make 100 percent (22.8 million acres) of NPR-A's subsurface available for oil and gas leasing, though it would honor the deferrals described in Alternative A. It would retain Special Areas at their current size and make no recommendations for addition to the National Wild and Scenic Rivers System.

Environmentally Preferred Alternative

Alternative B-1 is the environmentally preferred alternative. This is primarily because Alternative B-1 would make the least amount of lands available for oil and gas leasing and because new non-subsistence infrastructure would be prohibited on all unavailable lands. The restricted areas available for leasing and infrastructure would reduce the alternative's potential for impacts from oil and gas exploration and development in NPR-A. The prohibition on new non-subsistence infrastructure would not block a pipeline or other infrastructure associated with possible future development of offshore leases in the Chukchi Sea, though it would prevent that infrastructure within BLM-managed Kasegaluk Lagoon or Peard Bay or on lands within one mile of these two waterbodies within NPR-A. In addition, it would prevent infrastructure within the Reserve in support of offshore oil and gas development along the Beaufort Sea coast, thus further reducing the potential impacts to NPR-A's environment. In addition, Alternative B-1 recommends Congressional designation of twelve rivers or river segments for addition to the National Wild and Scenic Rivers System.

Many of the rivers or segments are wholly within areas in which no leasing or new non-subsistence infrastructure would be permitted under both Alternatives B-1 and B-2. However, three of the rivers are outside of the area in which no leasing or new non-subsistence infrastructure would be permitted. Consequently, Wild and Scenic designation under Alternative B-1 would provide additional protection to them and part of their riparian areas. Finally, though many stipulations and best management practices are common among the alternatives, where there are differences (e.g., wider river setbacks), Alternative B-1 normally has the most protective measures.

3. MANAGEMENT CONSIDERATIONS

The plan adopted in this ROD balances BLM's legislatively mandated goals of developing oil and gas and protecting surface values and takes cognizance of public and agency comments and consultation. It makes 52 percent of the lands within NPR-A available for oil and gas leasing and ensures that infrastructure applications, including those for potential pipelines, in support of offshore leases in the Chukchi and Beaufort Seas, are allowed within the Reserve. At the same time, it offers protections for surface resources and uses, particularly subsistence use. The ROD adopts this balanced decision after BLM gave careful consideration to the oil and gas potential of the Reserve and neighboring offshore areas and to the environmental values of NPR-A. The impact analysis undertaken for the NPR-A plan and presented in the Final NPR-A IAP/EIS (with a February 5, 2013 errata) is suitably specific for broad-scale management decisions made in this ROD. Greater site-specific analysis will occur when BLM receives an application to approve an action on the ground. This will be done through subsequent NEPA reviews and analysis, which will be conducted before BLM issues permits or approvals for any on-the-ground activity.

BLM's Legal Authorities and Responsibilities

Under the Naval Petroleum Reserves Production Act (NPRPA), the Secretary of the Interior is required to conduct oil and gas leasing and development in the NPR-A (42 USC § 6506a). The Department of the Interior and Related Agencies' Fiscal Year (FY) 1981 Appropriations Act specifically directs the Secretary to undertake "an expeditious program of competitive leasing of oil and gas" in the Petroleum Reserve. The decision in the ROD makes more than half of the Reserve available for oil and gas leasing, including lands near existing lease tracts and discoveries in the eastern part of the Reserve. The BLM estimates that the lands made available for leasing contain nearly three-fourths of estimated economically recoverable oil and about half of estimated economically recoverable gas. By making these lands and their projected oil and gas available for leasing, the decision adopted in this ROD fulfills BLM's responsibility under the NPRPA to manage NPR-A to conduct oil and gas leasing and development. Furthermore, the decision makes all lands along the Chukchi Sea coast, most of the lands along the Beaufort Sea coast, and other lands available for application for a wide range of route options for pipelines and other

infrastructure that would support offshore development. If such infrastructure is built, it could make marginal oil and gas resources in NPR-A economically viable, thus further enhancing oil and gas potential in the Reserve.

Two federal laws mandate protection for surface values in the NPR-A. Under the Federal Land Policy and Management Act (FLPMA), the Secretary has broad authority to regulate the use, occupancy, and development of public lands and to take whatever action is required to prevent unnecessary or undue degradation of the public lands (43 USC § 1732). The NPRPA provides that the Secretary “shall assume all responsibilities” for “any activities related to the protection of environmental, fish and wildlife, and historical or scenic values” (42 USC § 6503(b)) and authorizes the Secretary to “promulgate such rules and regulations as he deems necessary and appropriate for the protection of such values within the reserve.” (The NPRPA’s implementing regulations are found at 43 CFR Part 2360.) In addition, the NPRPA, as amended, authorizes the Secretary to designate lands “containing any significant subsistence, recreational, fish and wildlife, or historical or scenic value” and requires that in these lands activities “shall be conducted in a manner which will assure the maximum protection of such surface values to the extent consistent with the requirements of this Act” for exploration and production activities (P.L. 96-514, 42 USC § 6504(a)). The decision adopted in this ROD achieves these goals in a number of ways. The decision adds large areas to two existing Special Areas and creates the new Peard Bay Special Area. While allowing for a robust oil and gas program in NPR-A, the decision makes nearly half of the Reserve unavailable for oil and gas leasing. Areas made unavailable for leasing encompass critical wildlife habitat and other important surface values in the Special Areas and adjacent coastal water, thus maintaining these lands largely undisturbed. In some of the lands in which leasing would not be allowed, the plan prohibits nearly all new non-subsistence permanent infrastructure. For those lands on which leasing and development can occur, the plan provides many stipulations and best management practices to minimize impacts (see Appendix A).

The NPRPA, as amended, guided the process and constrains the decision scope of this plan. The Department of the Interior and Related Agencies’ Fiscal Year (FY) 1981 Appropriations Act exempted the Petroleum Reserve from section 202 of FLPMA (43 USC § 1712), which requires the preparation of land use plans (called resource management plans, in

regulations—43 CFR Part 1600—adopted by the BLM). Because of the exemption from FLPMA section 202, the plan was not developed as a resource management plan. While the IAP analyzed a range of possible future BLM management practices for the NPR-A in a manner similar to that done in a resource management plan, it was developed consistent with NEPA regulations—40 CFR Parts 1500-1508—rather than FLPMA regulations.

Consistent with the NPRPA, the NPR-A IAP addresses a narrower range of multiple use management than a resource management plan. The NPRPA, as amended, and its implementing regulations, require oil and gas leasing in the NPR-A and the protection of surface values to the extent consistent with exploration and development of oil and gas. Consistent with this purpose, the NPRPA also withdraws the NPR-A from all other forms of entry and disposition under the public land laws, including the mining laws. Therefore, this ROD makes no decision on opening lands to hard rock or coal mining.

The 1981 Appropriations Act also exempted the NPR-A from FLPMA section 603 (43 USC § 1782), which requires the completion of wilderness reviews and describes the procedures for managing any lands recommended to Congress for wilderness designation, pending Congressional action. Section 1320 of the Alaska National Interest Lands Conservation Act (ANILCA; 43 USC § 1784), however, grants the Secretary discretionary authority to “identify areas in Alaska which he determines are suitable as wilderness” and states that the Secretary “may, from time to time, make recommendations to the Congress for inclusion of any such areas in the National Wilderness Preservation System.” While section 603 of FLPMA requires that, pending congressional action, the BLM shall manage lands recommended for designation “so as not to impair the suitability of such areas for preservation as wilderness,” section 1320 of ANILCA states that “in the absence of congressional action,” the BLM shall manage the lands recommended for wilderness designation “in accordance with the applicable land use plans and applicable provisions of law.” Consistent with Secretary Ken Salazar’s June 1, 2011, memorandum to the BLM Director, in accordance with FLPMA section 201, the NPR-A IAP/EIS described lands in the Reserve possessing wilderness characteristics and the potential impacts to those characteristics, and BLM considered potential impacts to, and protection of, wilderness characteristics in this ROD.

Balancing of NPR-A's Resource Values

The plan adopted in this ROD is the result of careful consideration of the resource values of the NPR-A and the current state of oil and gas development in the Reserve and neighboring offshore and onshore areas. In fulfilling its responsibilities in the NPR-A, the BLM was influenced by several overarching factors.

1. *Understanding of the importance of aspects of the NPR-A's environment:*

This includes, but is not limited to, the importance of:

- lands near Teshekpuk Lake and more generally in much of the Arctic Coastal Plain east of Barrow, particularly for birds and caribou,
- the Western Arctic Herd of caribou which calves and spends much of the summer in southwestern NPR-A, particularly its importance for the subsistence use of residents of over forty villages in northern and northwestern Alaska,
- coastal habitats for the polar bear, for walrus (particularly along the Chukchi Sea coast), for seals and other marine and coastal inhabitants, and for birds (particularly as staging areas) in an environment affected by climate change,
- coastlines, particularly bays and lagoons, and rivers for subsistence hunting and fishing and access to subsistence use areas.

2. *Decreased potential for oil and gas development in NPR-A:* The U.S. Geological Survey in its 2010 updated assessment of undiscovered oil and gas in NPR-A reduced its estimate of technically recoverable oil in the Reserve by approximately 90 percent, from approximately 10 billion barrels to less than 1 billion barrels. Its estimate of technically recoverable gas in the Reserve remained relatively unchanged, but there is no means at this time to market North Slope gas. If at some future time North Slope gas could be made marketable or if new exploration in the NPR-A or new technologies suggest that more oil could be recovered from the Reserve, it could be appropriate to reconsider the balance between oil and gas leasing and surface resource protection in this ROD.

3. *Potential offshore oil and gas development, particularly in the Chukchi Sea:* The U.S. Geological Survey has estimated that federal offshore waters in the Chukchi Sea contain more than 15 billion barrels of technically recoverable oil in conventional accumulations and that more

than 8 billion barrels of technically recoverable oil lie in federal waters in the Beaufort Sea. In 2008 the Minerals Management Service sold \$2.7 billion in leases in the Chukchi Sea, and since then industry has spent many hundreds of millions of dollars preparing for exploratory drilling and potential development of those leases. In addition, the State of Alaska recently sold leases in Harrison and Smith Bays off the north coast of NPR-A in the Beaufort Sea. This plan recognizes the importance of not blocking the construction of onshore infrastructure that may be necessary to develop potential offshore resources.

The decisions made in three geographic areas are worthy of additional discussion.

Teshekpuk Lake and the coastal plain east of Barrow: Oil and gas and surface values converge on the lands around Teshekpuk Lake and the coastal plain in general east of Barrow. The Barrow Arch, a geologic structure along which all producing oil on the North Slope has been found, runs north of the lake from the southeast to the northwest. Lands along the crest and flank of the arch have generally been considered the most promising for oil discoveries. State oil and gas leases recently acquired in Smith and Harrison Bays are near the Barrow Arch. Surface lands, however, in a band of the Arctic coastal plain along northern NPR-A east of Barrow extending roughly 30 to 50 miles inland are important for many species of birds and for the Teshekpuk Caribou Herd, the most important herd for the subsistence use of villages in the Reserve.

The decision in this plan expands the Teshekpuk Lake Special Area (TLSA) to encompass all the roughly 30-to-50-mile band of land valuable for bird and caribou habitat between Native-owned lands near Barrow and Native-owned lands near Nuiqsut. The decision also broadens the purpose of the Special Area to encompass protection of caribou and shorebird habitats, as well as the original intent of protecting habitat for waterbirds. Designation of lands as a Special Area carries with it no specific restrictions on activities. It does require, however, that activities “be conducted in a manner which will assure the maximum protection of . . . surface values [identified by the Secretary for the Special Area] to the extent consistent with the requirements” of the NPRPA for exploration and production activities.

The TLSA as enlarged in this decision will provide such protection to the Teshekpuk Caribou Herd in important portions of its calving and insect

relief habitat. The enlarged TLSA includes all of the 75 percent kernel calving area and much of the 95 percent area for the caribou herd and the herd's most heavily used insect relief habitat (see Final IAP/EIS maps 3.3.6-5 through 3.3.6-7).

The enlarged TLSA also is important habitat for many waterbirds and shorebirds. It contains particularly important habitat for tundra swans, black brant, greater white-fronted geese, lesser snow geese, northern pintails, king eider, spectacled eiders, Steller's eiders, and yellow-billed loons (see Final IAP/EIS maps 3.3.5-7, 3.3.5-8, 3.3.5-13, 3.3.5-15, 3.3.5-17, and 3.3.8-1 through 3.3.8-4).

Of particular sensitivity in the TLSA are lands nearest Teshekpuk Lake that are the most heavily used by calving caribou and molting geese (see Final IAP/EIS maps 3.3.6-5 and 3.3.5-9 through 3.3.5-12). At least some of these lands have been made unavailable or deferred from leasing in every planning decision made by BLM for this part of NPR-A since 1983. To protect these particularly high values, the plan decision makes these lands nearest Teshekpuk Lake unavailable for leasing and prohibits new non-subsistence infrastructure, except for infrastructure in support of science and public safety.

The plan decision makes much of the remainder of the TLSA unavailable for oil and gas leasing, though it would not prohibit new non-subsistence permanent infrastructure, such as pipelines and other infrastructure to support oil and gas development onshore or offshore. Prohibiting leasing protects lands of importance for caribou calving and insect relief (see Final IAP/EIS maps 3.3.6-5 through 3.3.6-7) and a variety of waterbirds and shorebirds, many of which are listed above in the discussion of birds within the TLSA. Of particular note, however, are Steller's and spectacled eiders (listed as threatened under the Endangered Species Act (ESA); see Final IAP/EIS maps 3.3.8-1 through 3.3.8-3) and yellow-billed loons (ESA listing determined to be "warranted but precluded" by higher priority listing actions; the U.S. Fish and Wildlife Service is to make a final decision on listing in 2013; see Final IAP/EIS map 3.3.8-4).

The plan adopted by this ROD, however, makes lands in the eastern-most part of the TLSA available for oil and gas leasing. These lands, which have valuable waterfowl and caribou habitat, also include or are close to existing leases, including those with oil discoveries in the Greater Mooses Tooth

Unit. Consequently, these lands, at least through the remainder of this decade, offer the greatest promise for oil and gas development and making them available for leasing constitutes a proper balancing of BLM's management responsibilities for NPR-A.

In creating the balanced decision made in this ROD, the BLM also considered the potential role that infrastructure in NPR-A could play to support offshore oil and gas development in the Beaufort Sea. Of particular interest are the recently acquired State leases in Harrison and Smith Bays. Consequently, the decision makes lands south of both bays available for application for new non-subsistence permanent infrastructure, including pipelines and other infrastructure that could support offshore development.

As noted above, the decisions in this plan may be reconsidered to meet changing circumstances. The BLM may revisit these decisions through supplemental NEPA analysis.

Southwestern NPR-A: In contrast to the confluence of subsurface and surface values in the 30-to-50-mile band of the Arctic coastal plain east of Barrow, lands in southwestern NPR-A have considerable importance for caribou and associated subsistence users, but very little oil potential. The USGS projects that even at a price of \$180 per barrel, almost no oil could be economically produced from the area. This ROD makes almost all of these lands (described in more detail below) unavailable for leasing. While some of these lands (those north of 69° north latitude) have some potential for gas discoveries, as noted earlier, there currently is no means to transport gas to market from this location or from large already-discovered gas reserves on the North Slope.

These lands, however, have considerable importance for calving and summer movement for the Western Arctic Herd of caribou (see Final IAP/EIS maps 3.3.6-8 and 3.3.6-9). The plan adopted in this ROD enlarges the Utukok River Uplands Special Area (URUSA) to encompass all of the 75 percent kernel area and much of the 95 percent kernel area for the herd's calving and almost all of the most intensely used summer movement area within NPR-A.

The decision makes nearly all of URUSA unavailable for leasing and prohibits new non-subsistence infrastructure, except for infrastructure in support of science and public safety, in those unavailable lands. This

decision provides strong protection for this herd, which is important for subsistence in northwestern Alaska. This large herd disperses widely in the winter, wandering within reach of subsistence hunters from over forty villages in northwest Alaska. In addition, while protection for important wilderness characteristics was not a controlling factor in developing this decision, the decision provides protection for important wilderness characteristics, most notably through its prohibition of leasing and infrastructure in southwestern NPR-A.

The decision, however, makes the northern-most 18 miles of the URUSA available for leasing and for application for permits for infrastructure. The ROD makes this exception for this northern area because these lands have marginal importance for caribou, but could have importance for infrastructure to transport Chukchi Sea oil and gas across NPR-A. These lands include some calving habitat in the 95 percent kernel, but none in the 75 percent kernel. The USGS projects that these lands hold little or no potential for oil. They could, however, provide a route for pipeline and other necessary infrastructure associated with potential offshore development in the Chukchi Sea.

Coastal and riverine area: The NPR-A's coastline—both its waters and shores—and rivers are important environments. Protection of the waters are of obvious importance for fish (see Final IAP/EIS map 3.3.4-2). The coastline is important for caribou, which seek the NPR-A's shoreline to find breezes to ameliorate harassment by insects (see Final IAP/EIS section 3.3.6.1). Many species of waterbirds and shorebirds use the bays and lagoons; Kasegaluk Lagoon and Peard Bay are important as birds stage prior to fall migration southward (see Final IAP/EIS section 3.3.5).

Marine mammals, including polar bear, Pacific walrus, and several species of seal, use the coastal water and shore. The polar bear is listed as threatened under the ESA, and the USFWS in November 2010 issued a final rule designating critical habitat for the bear in NPR-A's coastal water, barrier islands, and for a ribbon of land five miles inland east of Barrow (see Final IAP/EIS map 3.3.8-6). On January 10, 2013 the U.S. District Court for the District of Alaska vacated the final rule that designated these lands as critical habitat, so these lands remain proposed. Walrus are increasingly hauling out on shore, including in Kasegaluk Lagoon (see Final IAP/EIS map 3.3.8-7). The USFWS has concluded listing the Pacific walrus as an endangered or threatened species is warranted, but is currently precluded by

the need to address higher priority species. The USFWS is scheduled to consider the walrus for listing in 2017. Ringed, bearded, spotted, and ribbon seals also use coastal waters in NPR-A; the first two species are listed as threatened under the ESA.

Coastal and riverine areas are also important for subsistence. North Slope residents take fish and marine mammals from these waters (see Final IAP/EIS maps 3.4.3-2, and 3.4.3-5 through 3.4.3-7). In addition, in this roadless area, boat travel along the coast and rivers is critical for summer access to subsistence resources. The great majority of Native allotments and subsistence cabins and fixed campsites lie along the coast or, even more commonly, along rivers (see Final IAP/EIS maps 1-1 and 3.4.3-4).

The decision adopted in this ROD protects the coast and rivers in several ways. Kasegaluk Lagoon (within NPR-A) and Peard Bay and lands within one mile of those waterbodies are designated as Special Areas. Those two waterbodies, as well as Elson Lagoon, Dease Inlet, Admiralty Bay and many smaller inlets along the coast north and east of Teshekpuk Lake would not be available for oil and gas leasing nor would their shores. Lands within one mile of Kasegaluk Lagoon and Peard Bay would not be available for leasing nor would larger areas near the lagoons, bays, and inlets farther east. In addition, stipulation K-6 prohibits the location of exploratory or production drilling pads or central processing facilities in coastal waters or on islands between the northern boundary of the NPR-A and the mainland or in inland areas within one mile of the coast. The plan also takes cognizance of the changing coastline and river courses in NPR-A. All setback distances provided for in the stipulations and best management practices are to be measured as of the time of the application for a permit for a development. These coastal and riverine provisions are designed to minimize the chance of an oil spill into these important waters or other disturbances to these habitats and access routes. The larger river setbacks under Stipulation K-1 are provided to rivers with substantial subsistence importance and, in the case of the Colville, Kikiakrorak, and Kogosukruk rivers, to protect raptor habitats. It is important to note, however, that the plan's protections, with the exception of the lands in which new non-subsistence permanent infrastructure would not be allowed near Teshekpuk Lake and in southwestern NPR-A, will not block pipelines and other infrastructure. (See Chapter 1.)

Mitigation Measures

The decision adopted by this ROD includes restrictions on leasing and new non-subsistence permanent infrastructure, stipulations and best management practices, designation of Special Areas, and other measures to minimize impacts. Additional measures to protect the environment may be required during the permitting process for specific projects. Those measures may respond to specific potential impacts of the proposal and may include mitigations consistent with 40 CFR 1508.20, including on-site or off-site compensation for impacts. The decision in this ROD includes all practicable means to avoid or minimize environmental harm consistent with the purpose and need of the action, including potential impacts associated with cumulative impacts, except six potential mitigation measures discussed in Appendix C.

ANILCA § 810

The Alaska National Interest Lands Conservation Act (ANILCA) §810(a) requires that a subsistence evaluation be completed on the final plan for the NPR-A. ANILCA also requires that this evaluation include findings on three specific issues:

1. The effect of such use, occupancy, or disposition on subsistence uses and needs;
2. The availability of other lands for the purpose sought to be achieved; and
3. Other alternatives that reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes (16 U.S.C. §3120).

The following discussion summarizes the ANILCA §810 evaluation for the decision in this ROD. The summary is based on the detailed ANILCA §810 analysis in Appendix A of the Final IAP/EIS for the Preferred Alternative. The analysis and conclusions presented in the detailed ANILCA §810 evaluation in the Final IAP/EIS also apply to the decision in this ROD, because the decision is substantially the same as the Preferred Alternative in the Final IAP/EIS and the overall effect of the changes has been to reduce the potential impacts on subsistence resources. As a result, the impacts of the decision in this ROD on subsistence resources will be no more than, and

likely even less than, those analyzed for the Preferred Alternative in the Final IAP/EIS.

- a. *Without the Cumulative Case:* The effects of the plan adopted in this ROD fall below the “may significantly restrict” threshold, which is the test for a positive finding under ANILCA §810. Adequate stipulations and best management practices have been incorporated into the plan, including specific procedures for subsistence consultation with directly affected subsistence communities, requirements for extensive studies of caribou movement, and increased setbacks or other protective measures specific to birds, to ensure that significant restrictions to subsistence uses and needs would not occur. The impacts to subsistence resources and uses for this alternative are minimal. This finding applies to villages in and near the planning area (Anaktuvuk Pass, Atqasuk, Barrow, Nuiqsut, Point Lay, and Wainwright).
- b. *With the Cumulative Case:* The cumulative case is presented in Appendix A of the Final IAP/EIS and includes, but is not limited to, offshore oil and gas development, a road and pipeline between the Umiat and Dalton Highway areas, additional oil and gas development east of NPR-A, a commercial gas pipeline south from the North Slope, and oil spills and gas releases. The effects of the cumulative case exceed the “may significantly restrict” threshold, and thus a positive ANILCA §810 determination was made. Although the effects of the activities proposed under the plan adopted in this ROD fall below the threshold, adding them to those of the cumulative case results in a level of effects that “may significantly restrict” subsistence uses, with the potential to affect Anaktuvuk Pass, Atqasuk, Barrow, Nuiqsut, Point Lay, and Wainwright.

ANILCA §810(a) provides that no “withdrawal, reservation, lease, permit, or other use, occupancy or disposition of the public lands which would significantly restrict subsistence uses shall be effected” until the federal agency gives the required notice and holds a hearing in accordance with §810(a)(1) and (2), and makes the three determinations required by §810(a)(3)(A), (B), and (C). The BLM has found in this subsistence evaluation that all the alternatives considered in the IAP/EIS (including the No Action Alternative), when considered together with all the past, present,

and reasonably foreseeable future cumulative effects discussed in the IAP/EIS, may significantly restrict subsistence uses. Therefore, the BLM undertook the notice and hearing procedures required by ANILCA §810(a)(1) and (2), as described above, and now must make the three determinations required by §810(a)(3)(A), (B), and (C). 16 U.S.C. §3120(a)(3)(A), (B), and (C).

The BLM has determined that the plan adopted in this ROD meets the following requirements (16 U.S.C. §3120(a)(3)(A), (B), and (C)) for federal actions that may result in a significant restriction on subsistence uses:

- 1. The significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands.*

The BLM prepared the Final IAP/EIS in accordance with its responsibility to manage the NPR-A under the authority of two laws passed in 1976, the NPRPA and the FLPMA. The NPRPA authorizes and directs the Secretary of the Interior to undertake an “expeditious program of competitive leasing of oil and gas in the National Petroleum Reserve-Alaska” (42 U.S.C. § 6508(a)). At the same time, the statute also requires that all oil and gas activities “undertaken pursuant to this section shall include or provide for such conditions, restrictions, and prohibitions as the Secretary deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources” of the NPR-A and that maximum protection be provided for significant surface values, including environmental, fish and wildlife, historical, scenic, and subsistence values consistent with the purposes of the act (42 U.S.C. § 6504 and 6508).

It was in furtherance of these objectives, together with other management guidance found in the NPRPA, FLPMA, NEPA, and ANILCA, that the IAP/EIS was undertaken. After considering a broad range of alternatives, the decision described in this ROD was developed to make available lands for environmentally responsible oil and gas exploration and development, through further lease sales in the NPR-A, while minimizing impacts to important subsistence resources and subsistence-use areas. The resulting decision considers the necessity for economically feasible development while providing effective protections to minimize any impacts on subsistence resources and uses. Under this decision, making some lands unavailable for oil and gas leasing, prohibiting new non-subsistence

infrastructure in most of the lands made unavailable for leasing, and utilizing performance-based lease stipulations and best management practices serve as the primary mitigations to be used to reduce the impact of the proposed activity on subsistence resources.

The BLM has considered and balanced a variety of factors with regard to the proposed activity on public lands, including, most prominently, the comments received during public meetings and hearings which stressed the importance of protecting important caribou habitats for both the Teshekpuk Caribou Herd and the Western Arctic Herd. The plan adopted in this ROD does not significantly restrict subsistence and it reduces the potential for such restrictions compared to current management. The potentially significant restriction on subsistence uses associated with the cumulative case could be lessened somewhat if Alternative B-1 was adopted, but even if the agency were to adopt Alternative B-1, the cumulative impacts would still reach the may-significantly-restrict threshold under ANILCA Section 810.

The BLM has determined that the significant restriction that may occur under Alternative B-2, when considered together with all the possible impacts of the cumulative case, is necessary, consistent with sound management principles for the use of these public lands, and for BLM to fulfill the management goals for the Planning Area as guided by the statutory directives in the Naval Petroleum Reserves Production Act, Federal Land Policy and Management Act, and other applicable laws.

- 2. The proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition.*

The BLM has determined that the decision described in this ROD involves the minimal amount of public lands necessary to accomplish the purposes for which the IAP/EIS was undertaken.

Given the management and policy objectives previously described and the statutory directives of the NPRPA and FLPMA, the agency considered a number of factors in identifying whether to make additional lands unavailable for leasing, and if so, which lands. In particular, the agency considered the location of areas with high potential for oil and gas resources, the location and amount of land necessary for an economically feasible leasing program, the importance of surface resources and uses, and measures

to reduce the possibility of a significant restriction on subsistence uses. The alternative selected strikes a balance between these varied considerations by balancing the interest in making sufficient lands available to achieve an economically feasible leasing program with mitigation and restricting development activities on lands that are most important for subsistence resources.

Specifically, the decision makes unavailable for leasing large tracts of land important for the Teshekpuk Caribou Herd and the Western Arctic Herd, both of which have great importance for subsistence use. The decision in this ROD also makes unavailable for leasing coastal lands and waters that contain important subsistence resources and wildlife habitat, provides enlarged infrastructure setbacks from rivers important for subsistence use, and provides other protections for subsistence users and subsistence resources and their habitats.

The BLM has determined that the decision makes available for leasing the minimum amount of public lands necessary to achieve a successful leasing program while precluding or restricting oil and gas activities in the areas most important for subsistence resources and uses.

3. Reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

During scoping for the IAP/EIS, BLM identified subsistence use as one of the major issues to be addressed. Information on access, harvests, and traditional use patterns was gathered during the IAP/EIS process through meetings in villages on the North Slope, meetings with the NPR-A Subsistence Advisory Panel, and consultation with tribal and local governments. The plan presented in the ROD, including detailed lease stipulations and best management practices, contains significant restrictions and requirements for lessees/permittees, including setbacks and prohibitions to minimize impacts to important subsistence users and resources.

Consultation and coordination with North Slope communities and Native village representatives will continue to provide a valuable avenue for the exchange of information and oversight. The key components of mitigation in the plan are making lands important for the Teshekpuk Caribou Herd and the Western Arctic Herd unavailable for oil and gas leasing, prohibiting new non-subsistence infrastructure in most of these unavailable lands, and

making important coastal lands and waters unavailable for leasing. Additional protections include, but are not limited to:

- Best Management Practices H-1 and H-2 will require additional consultation/notification efforts by lessees/land-users to potentially affected communities.
- Stipulation K-1 includes setbacks from rivers, including setbacks of at least a mile along rivers identified as important for subsistence use.

Based on these mitigations and the other prohibitions, restrictions, requirements and limitations to surface resources in the performance-based lease stipulations and best management practices, the BLM has determined that the decision presented in this ROD includes reasonable steps to minimize adverse impacts on subsistence uses and resources.

Wild and Scenic Rivers Designations

The Final IAP/EIS in section 3.4.7 describes the process by which BLM considered Wild and Scenic River eligibility and suitability. The plan considered twelve rivers or river segments to be eligible for designation, but this ROD does not determine them to be suitable for designation, instead protecting them through other means.

The eligible rivers and river segments are entirely within BLM's management. The plan adopted in this ROD provides protection to these rivers and river segments and their wild and scenic river values. Under the plan, the BLM will manage all twelve rivers or river segments to protect their free flow, water quality, and outstandingly remarkable values. In addition to this commitment, the plan includes decisions that protect the rivers and river segments and lands surrounding them. All but three of the twelve rivers or river segments in NPR-A are within the area in the southwestern part of the Reserve in which no leasing will be allowed and in which nearly all new non-subsistence infrastructure will be prohibited. The portions of three rivers that are in lands that would be available for lease and in which new non-subsistence infrastructure could be permitted have setbacks (one mile for the Utukok and Kokolik rivers and a half mile for the Awuna River) under stipulation K-1 that would limit the infrastructure that could be in these setbacks.

Endangered Species Act Consultation

Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration-Fisheries (NOAA-Fisheries), as appropriate, to ensure that their actions do not jeopardize the continued existence of species listed as threatened or endangered under ESA, or destroy or adversely modify their critical habitat.

Within the planning area, eight species are protected under the provisions set forth in the ESA. Three species are listed as Endangered species: bowhead whale (*Balaena mysticetus*), humpback whale (*Megaptera novaeangliae*), and fin whale (*Balaneoptera physalus*). Five species are listed as Threatened: spectacled eiders (*Somateria fisheri*), Steller's eider (*Polysticta stelleri*), polar bear (*Ursus maritimus*), the Beringia distinct population segment of bearded seal (*Erignathus barbatus nauticus*), and the Arctic subspecies of ringed seal (*Phoca hispida hispida*). The USFWS designated Critical Habitat for the polar bear within the NPR-A in November 2010. In January 2013, the U.S. District Court for the District of Alaska issued a decision vacating the final rule that designated the polar bear critical habitat, in response to which the Department recently filed a motion for reconsideration with the court.

To meet requirements outlined in Section 7(a)(2), the BLM consulted with NOAA-Fisheries on the whale and seal species and with the USFWS on the eiders and polar bear. NOAA-Fisheries concurred with the BLM's determination that the Preferred Alternative may affect but is not likely to adversely affect the whale and seal species. The USFWS determined through a Biological Opinion (BO) that the Preferred Alternative may adversely affect the eiders and the polar bear, but would not jeopardize the continued existence of these species. Further, the analysis concluded that the Preferred Alternative is not likely to destroy or adversely modify the polar bear critical habitat as defined in both the final and proposed critical habitat designation rules. The BO did not identify any non-discretionary Reasonable and Prudent Measures and Terms and Conditions because the land allocations, lease stipulations, and BMPs are expected to adequately protect listed species and minimize take. The BLM will ensure their lessees, permittees, and agents of their lessees and permittees adhere to all lease stipulations and BMPs.

In addition the BO included three Conservation Recommendations. The decision adopts and expands upon the substance of the Conservation Recommendations by requiring the studies identified in Chapter 1 under the heading “Studies and Monitoring.”

It should be noted that following leasing, any proposed exploration or development projects will be subjected to further site-specific ESA review before permits or approvals for those projects will be granted to ensure that BLM’s decisions continue to be well informed as activities proceed. These subsequent ESA reviews will assess potential impacts from the specific projects on listed species in the project area, based on any new information about the resources and known information about the location and technology of the proposed projects. These subsequent ESA reviews will occur for each stage of oil and gas exploration and development activities proposed to be authorized by BLM.

Executive Orders 11988 and 11990

The following findings are based on a comprehensive impact analysis done in compliance with Executive Orders 11988 and 11990 in the Final IAP/EIS (see sections 4.3.6, 4.4.6, 4.5.6, 4.6.6, 4.7.6, 4.8.7.6, 4.9.6, 4.10.6, 4.11.6, and 4.12.4.6 and related subsections).

Executive Order 11988—Floodplain Management

Executive Order 11988 concerning the protection of floodplains requires an agency to provide leadership and to take action to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities. Pursuant to the order, the agency has a responsibility to:

1. Evaluate the potential effects of any actions that may take place in a floodplain;
2. Ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and
3. Prescribe procedures to implement the policies and requirements of Executive Order 11988.

Additional requirements are as follows:

1. Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain and the evaluation required will be included in any statement prepared under Section 102(2)(C) of the NEPA (42 U.S.C. 4332(2)(C)).
2. If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the law and with the policy presented in this Order requires siting in a floodplain, the agency shall, prior to taking action,
 - a. design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations, and
 - b. prepare documentation explaining why the action is proposed to be located in the floodplain.

The following discussion summarizes the evaluation and findings of impacts to floodplains as presented in the Final IAP/EIS for the Preferred Alternative and applicable to the decision presented in this ROD. It also identifies protective mitigations developed to avoid or lessen impacts to floodplains.

More than 95 percent of the NPR-A may be classified as wetlands, which includes associated floodplains. Total avoidance of floodplains is impossible because of the extremely large proportion of the area that can be classified as wetlands and because floodplains are a large part of the flat, low-lying wetlands in the Arctic Coastal Plain, which dominates much of the planning area that contains any potential, according to the USGS, for oil or gas development. Consequently, it is likely that oil and gas infrastructure will need to be located within floodplains.

The long-term effects of oil and gas exploration and development activities, both direct and cumulative in nature, on these floodplains are expected to be insignificant (negligible to minimal) in the context of the large floodplain area in the NPR-A. The combined effect of exploration and development will be unlikely to significantly impact any plant species or community, cause significant soil loss, or result in other than short-term and localized

loss of water resources or water quality (See e.g. NPR-A Final IAP/EIS Section 4.5.6, Wetlands and Floodplains). Therefore, no significant impacts are expected that will affect public health, safety, and welfare through changes in the supply, quality, recharge or discharge and pollution of water, or, flood and storm hazards or sedimentation and erosion. No impacts will occur that will result in long-term changes in the natural ecosystem.

The impacts that could occur to floodplains will be mitigated to the greatest extent practicable primarily through:

- making a large portion of the coastal plain east of Barrow unavailable for oil and gas leasing,
- prohibiting nearly all new non-subsistence permanent infrastructure in approximately 1.1 million acres of that unavailable area, and
- the stipulations and best management practices incorporated into this ROD. The stipulations and best management practices offer a variety of protections that protect floodplains (see Appendix A), including setbacks from streams for short-term activities as well as permanent facilities.

In addition to the practicable mitigation included in the plan, the BLM (and, in some cases, other federal agencies) will consider alternatives to avoid adverse effects and incompatible development in the floodplains before any ground activities are approved. This will be done through subsequent NEPA reviews and analysis, which will be conducted before any construction or operation permits or approvals are issued. Compliance with the Executive Order 11988 will be undertaken at these subsequent stages through consideration of all practicable alternatives and additional mitigation in order to ensure that all possible protection is provided for the floodplains' functions and values.

Executive Order 11990—Protection of Wetlands

Executive Order 11990 concerning the protection of wetlands requires that the BLM consider factors relevant to the proposal's effect on the survival and quality of the wetlands. Factors to be considered include the following:

1. Public health, safety, and welfare; including water supply, quality, recharge and discharge, pollution; flood and storm hazards; and sediment and erosion;

2. Maintenance of natural systems; including conservation and long-term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and,
3. Other uses of wetlands in the public interest, including recreation, scientific, and cultural uses.

In furtherance of the NEPA (42 U.S.C. 4331(b)(3)) to improve and coordinate federal plans, functions, programs, and resources so that the nation may attain the widest range of beneficial uses of the environment without degradation and risk to health or safety, the agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetland unless the head of the agency finds:

1. There is no practicable alternative to such construction, and
2. The proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors.

The following discussion summarizes the evaluation of impacts and findings to wetlands as presented in the Final IAP/EIS in the Preferred Alternative and applicable to the decision presented in this ROD. It also identifies protective mitigations developed to avoid or lessen impacts to wetlands.

More than 95 percent of the NPR-A may be classified as wetlands. Total avoidance of wetlands is impossible because of the extremely large proportion of the area that can be classified as wetlands. Consequently, it is likely that oil and gas infrastructure will need to be located within wetlands.

The long-term effects of oil and gas exploration and development activities, including direct, indirect, and cumulative effects, on the wetlands of the planning area are expected to be insignificant (negligible to minimal) in the context of the wetlands of the NPR-A. The combined effect of exploration and development will be unlikely to significantly impact any plant species or community, cause significant soil loss, or result in other than short-term and localized loss of water resources or water quality (See e.g. NPR-A Final IAP/EIS Section 4.5.6, Wetlands and Floodplains). Therefore, no significant impacts are expected that will affect public health, safety, and welfare through changes in the supply, quality, recharge or discharge and pollution

of water, or, flood and storm hazards or sedimentation and erosion. No impacts will occur that will result in long-term changes in the natural ecosystem.

The impacts that could occur to wetlands will be mitigated to the greatest extent practicable primarily through:

- making lands near Kasegaluk Lagoon and Peard Bay, a large portion of the coastal plain east of Barrow, and most of the Utukok River Uplands Special Area unavailable for oil and gas leasing,
- prohibiting nearly all new non-subsistence permanent infrastructure in approximately 1.1 million acres of the unavailable area east of Barrow and in most of the Utukok River Uplands Special Area, and
- the stipulations and best management practices incorporated into this ROD. The stipulations and best management practices offer a variety of protections that protect floodplains (see Appendix A). Given that nearly all of the NPR-A is in wetlands, nearly all of the stipulations and best management practices provide some protection for wetland resources.

In addition to the practicable mitigation included in the plan, the BLM (and, in some cases, other federal agencies) will consider alternatives to avoid adverse effects and incompatible development in the wetlands before any ground activities are approved. This will be done through subsequent NEPA reviews and analysis, which will be conducted before any construction or operation permits or approvals are issued. Compliance with the Executive Order 11990 will be undertaken at these subsequent stages through consideration of all practicable alternatives and additional mitigation in order to ensure that all possible protection is provided for the wetlands functions and values.

Environmental Justice

Executive Order 12898 requires that an agency identify and address “as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The IAP/EIS identified direct and indirect impacts that may affect the Iñupiat residents of the North Slope Borough. These residents of the borough qualify as a minority population and could potentially be disproportionately impacted by the decision adopted in this ROD.

The decision mitigates impacts to this population. It accomplishes this primarily through making some lands unavailable for oil and gas leasing, including a large portion of the eastern coastal plain utilized by subsistence users of Atqasuk, Barrow, and Nuiqsut; by adopting measures that protect subsistence resources, access to those resources, and public health; and by monitoring lessees'/permittees' activities to ensure compliance with requirements and other monitoring to assess the effectiveness of mitigation and help adapt management to better meet resource and use objectives. To provide for meaningful, regular input by local communities to the effects of on-going implementation of the NPR-A Integrated Activity Plan, this ROD requires the BLM to establish the NPR-A Working Group consisting of representatives of North Slope local governments, Native corporations, and tribal entities.

4. PUBLIC INVOLVEMENT

The BLM considered public comments throughout the NPR-A IAP/EIS planning process. The following list highlights major steps in the public involvement process. For more information on public involvement, see Chapter 5 of the Final IAP/EIS.

Scoping: Scoping occurred from July 28 to October 1, 2010. The BLM held eight public meetings in Alaska and received approximately 147,000 comments.

Public Review of the Draft IAP/EIS: The comment period for the Draft IAP/EIS occurred from March 30 through June 15, 2012. The BLM held nine public meetings in Alaska and received more than 401,000 comments.

Comments received after the Final IAP/EIS was released and prior to the ROD: In reaching the decisions in this ROD, the BLM reviewed and fully considered comments received after distribution of the Final IAP/EIS on December 19, 2012. The comments did not identify any significant new circumstances or information related to environmental concerns bearing upon the proposed action or its impacts. Instead, they generally reflect concerns already raised by comments submitted during scoping and the public's review of the Draft IAP/EIS.

In addition to the above, the plan benefited from suggestions and careful review of the analysis in the IAP/EIS by four cooperating agencies - the North Slope Borough, the State of Alaska, the U.S. Fish and Wildlife Service, and the U.S. Bureau of Ocean Energy Management. (The State of Alaska withdrew as a cooperating agency on September 12, 2012.)

Consultation occurred during the IAP/EIS process with:

- Tribes as required by a Presidential Executive Memorandum dated April 29, 1994,
- Communities, tribal organizations, and Native corporations on the North Slope by high-ranking Alaskan Department of Interior and BLM officials January 30 to February 4, 2013,
- Multiple agencies, including the U.S. Fish and Wildlife Service, U.S. National Park Service, U.S. Bureau of Ocean Energy, Environmental

- Protection Agency, and the State of Alaska Department of Environmental Conservation in accordance with the June 2011 “Memorandum of Understanding among the U.S. Department of Agriculture, U.S. Department of the Interior, and U.S. Environmental Protection Agency, Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through the National Environmental Policy Act Process” to model potential air quality impacts of oil and gas activities in the NPR-A and to develop appropriate air quality protection measures,
- the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration—Fisheries pursuant to the Endangered Species Act, and
 - Alaska’s State Historic Preservation Office pursuant to the National Historic Preservation Act.

Pursuant to ANILCA 810(a)(1) and (2), the BLM also conducted hearings in North Slope communities to gather comments regarding potential impacts to subsistence use resulting from the alternatives considered in the IAP/EIS.

APPENDIX A: LEASE STIPULATIONS AND BEST MANAGEMENT PRACTICES

Definitions

The following definitions apply to the stipulations and best management practices listed in this appendix. The Glossary of the Final IAP/EIS has additional definitions.

Active Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters, including the flood-prone areas of offshore islands, composing, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year (also referred to as the 100-year or base floodplain).

Authorized Officer: A position of authority for approval of various activities through delegation from the Secretary of the Interior. Currently, the designated authorized officers in Alaska for leasing, surface use, and permitting are 1) State Director, 2) Manager of the Arctic Field Office in Fairbanks, and 3) Deputy State Director, Division of Resources.

Best Management Practice: Mitigation developed through the BLM planning process/NEPA process that is not attached to the oil and gas lease but is required, implemented, and enforced at the operational level for all authorized (not just oil and gas) activities in the planning area.

Best management practices were developed with various mechanisms in place to ensure compliance. These mechanisms include the following:

1. Some best management practices are pre-application requirements; therefore compliance will precede approval of the proposed activity. For example, Best Management Practice H-1(a) requires consultation with affected communities prior to submission of an application for relevant activities within the NPR-A. If consultation has not taken place, the application will be rejected or will be considered incomplete until such time that the consultation has occurred.
2. Other best management practices are required design features, and will have to be incorporated into the applicant's proposal. As an integral part of the proposal and the authorization, the requirement

- does not need to be stipulated to be enforceable. For example, a minimum pipeline height of 7 feet for above ground pipelines is a required design of any approved above ground pipeline (Best Management Practice E-7). Since the authorization (a ROW in this case) authorizes a pipeline with a minimum height of 7 feet, anything less (unless specifically approved through additional NEPA analysis and the permit) is not in compliance and enforcement actions may be taken even if the permit does not specify a minimum of 7 feet.
3. Other best management practices will become conditions of approval on post lease land use authorizations. For example, Best Management Practice C-1 prohibits heavy equipment used for cross-country moves within ½ mile of occupied grizzly bear dens.

Body of Water or Water body: A lake, river, stream, creek, or pond that holds water throughout the summer and supports a minimum of aquatic life.

Buffer: A zone extending outward or inward from the periphery of a “protected” feature for a specified distance. Activities and development may be prohibited or limited by type or time within the buffer dependent on the goal associated with applying the buffer.

Class I air quality area: One of 156 protected areas such as national parks (over 6,000 acres), wilderness areas (over 5,000 acres), national memorial parks (over 5,000 acres), and international parks that were in existence as of August 1977, where air quality should be given special protection. Federal Class I areas are subject to maximum limits on air quality degradation called air quality increments (often referred to as Prevention of Significant Deterioration [PSD] increments). All areas of the United States not designated as Class I are Class II areas. The air quality standards in Class I areas are more stringent than national ambient air quality standards.

Consultation: Consultation, as it is referenced in the lease stipulations, does not infer formal consultation as required under other legal mandates such as “Section 7 Consultation” under the ESA. Rather, consultation implies that the BLM or the Lessee/Permittee will contact other agencies or entities to inform them of potential actions and to seek input on noted topics. This includes informal contacts, and written, electronic, and/or verbal communication.

Criteria Air Pollutants: Those pollutants subject to the National Air Quality Standards (<http://www.epa.gov/air/criteria.html>). They currently include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (both PM₁₀ and PM_{2.5} – inhalable and respirable particulates), and sulfur dioxide (SO₂).

Development Activities: Any activity associated with construction and operation of facilities or equipment post exploration.

Field: The term used to describe the area containing surface infrastructure above one or more subsurface reservoirs. In this sense, “field” is analogous to “a Unit participating area or collection of participating areas.” The infrastructure in the field includes, but is not limited to, drilling and production pads, service roads, perhaps an airstrip, and processing and support facilities. Field infrastructure may be used in the development and production of several oil/gas accumulations in different subsurface reservoirs. Fields typically have a primary reservoir that supports initial development in addition to satellite reservoirs that are developed later and tie into the main facilities. Although oil and gas reservoirs may vary greatly in subsurface depth and other geologic characteristics, because they are located in the same geographic area it is more efficient to coordinate and share the necessary surface infrastructure. Fields may or may not be connected by permanent roads to adjacent fields or transportation facilities outside the field area.

Greenhouse gas (GHG): A gas that absorbs and emits thermal radiation within the lowest layers of the atmosphere. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases that are considered air pollutants are carbon dioxide, (CO₂), methane (CH₄), nitrous oxide (N₂O), and chlorofluorocarbons (CFCs).

Hazardous air pollutants (HAPs): (also known as toxic air pollutants) Those pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. The Environmental Protection Agency (EPA) is required to control 187 hazardous air pollutants. Examples of HAPs include benzene (found in gasoline), perchlorethylene (emitted from dry cleaning facilities), and methylene chloride (used as a solvent).

Lease Stipulation: Mitigation developed through BLM planning process/NEPA process that is specifically attached to a lease.

NO_x: Mono-nitrogen oxides, including nitric oxide (NO) and nitrogen dioxide (NO₂). It is formed when naturally occurring atmospheric nitrogen and oxygen are combusted with fuels in automobiles, power plants, industrial processes, and home and office heating units.

Permanent Oil and Gas Facilities: Permanent Facilities include production facilities, pipelines, roads, airstrips, production pads, docks and other bottom-founded structures, seawater-treatment plants, and other structures associated with an oil and gas operation that occupy land for more than one winter season; also included are material sites such as sand and gravel, and “temporary platforms” if those platforms are used for production rather than exploration. Exploration wellheads and seasonal facilities such as ice roads and ice pads are excluded, even when the pads are designed for use in successive winters. This definition does not include over-summering ice pads for exploration purposes.

Setback: A distance measured from a named ground feature, such as a river or lake, in which certain activities or structures would not be allowed. All setback distances are to be measured as of the time of the application for a permit for a development. In addition, facility development along the coast would be required to be designed to maintain the prescribed setback distance for the anticipated life of the facility.

SO_x: Sulfur oxides, including sulfur dioxide (SO₂). A product of vehicle tailpipe emissions.

Stipulation: A requirement or condition placed by the Bureau of Land Management on the leaseholder for operations the leaseholder might carry out within that lease. The Bureau of Land Management develops stipulations that apply to all future leases within the National Petroleum Reserve-Alaska.

Temporary Platform: A facility that does not require the use of an ice or gravel pad to support oil and gas and related exploration activities. An example of a temporary platform recently used on the North Slope is Anadarko Petroleum's Arctic Drilling Platform used for the company's Hot Ice Project during the winters of 2003-2004. The facility consisted of a series of platform modules joined together and supported above the tundra

surface on steel legs. Once the project was completed the platform was disassembled and the support legs were removed, leaving the tundra surface undisturbed. Note: A temporary platform that is used for production, as opposed to exploration, would be considered a permanent oil and gas facility and be subject to the restrictions on placement of such structures.

Valid existing: in the context of exceptions for the development of “valid existing NPR-A oil and gas leases,” “valid existing” leases refers to oil and gas leases issued by the BLM prior to the signing of this record of decision and valid at the time of the application for approval of an action for which the “valid existing NPR-A oil and gas lease” exception is requested.

Volatile Organic Compounds (VOCs): A group of chemicals that react in the atmosphere with nitrogen oxides in the presence of sunlight and heat to form ozone. VOCs contribute significantly to photochemical smog production and certain health problems. Examples of VOCs are gasoline fumes and oil-based paints.

Applicability of Requirements/Standards

All surface disturbing activities such as exploratory drilling, road/pipeline construction, seismic acquisition, and overland moves require additional authorization(s) issued subsequent to leasing. The stipulations and best management practices require that certain protections of resources and uses be achieved. Requirements and standards listed with the stipulations and best management practices represent BLM’s current understanding of how lessees/permittees would achieve the objectives of the stipulation or best management practice.

A lessee/permittee may propose a deviation from the requirements/standards of stipulations and best management practices as part of an authorization application. Prior to approving an alternative procedure as part of the authorization, BLM’s staff would analyze the proposal and determine if the proposal incorporating the alternative procedure would achieve the objectives of the stipulations and best management practices. If the BLM determines that the alternative procedure proposed by the applicant would meet the stipulation’s or best management practice’s objective, BLM could approve the alternative procedure. If BLM determines that the alternative procedure proposed by the applicant is unlikely to meet the objectives of a

stipulation or best management practice, the requirements/standards would still be required. However, the authorized officer may allow a deviation from the objectives and requirement/standard in a new decision document supported by additional NEPA analysis.

The BLM could independently require different actions than those listed under requirements/standards. If, after experience or additional study, BLM concludes that a requirement/standard is not achieving or is unlikely to achieve the protective objective when applied to a specific future on-the-ground action or would not do so as well as the use of recently proven technology or techniques, BLM could at the permitting stage and under the terms of the stipulation or best management practice, impose other restrictions to meet the objective.

Stipulations and Best Management Practices

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

A-1 Best Management Practice

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

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

A-2 Best Management Practice

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

Requirement/Standard: Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the authorized officer for approval, in consultation with federal, State, and North Slope Borough regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application.

Management decisions affecting waste generation shall be addressed in the following order of priority: 1) prevention and reduction, 2) recycling, 3)

treatment, and 4) disposal. The plan shall consider and take into account the following requirements:

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

A-3 Best Management Practice

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

Requirement/Standard: For oil- and gas-related activities, a hazardous materials emergency contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures in the plan applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of

best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures. In addition contingency plans related to facilities developed for oil production shall include requirements to:

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

A-4 Best Management Practice

Objective: Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes and marine waters, as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.

Requirement/Standard: Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and

response contingency plan per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:

- a. On-site Clean-up Materials. Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.
- b. Storage Containers. Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of water bodies, fuel containers are to be stored within appropriate containment.
- c. Liner Materials. Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.
- d. Permanent Fueling Stations. Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.
- e. Proper Identification of Containers. All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.
- f. Notice of Reportable Spills. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the authorized officer as soon as possible, but no later than 24 hours after occurrence.
- g. Identification of Oil Pans (“duck ponds”). All oil pans shall be marked with the responsible party's name.

A-5 Best Management Practice

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

Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception that small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, are permitted.

The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

A-6 Best Management Practice

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

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

A-7 Best Management Practice

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

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

A-8 Best Management Practice

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

Requirement/Standard: Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:

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

A-9 Best Management Practice

Objective: Reduce air quality impacts.

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

A-10 Best Management Practice

Objective: Prevent unnecessary or undue degradation of the lands and protect health.

Requirement/Standard: This measure includes the following elements:

- a. Prior to initiation of a NEPA analysis for an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source (hereafter project), the authorizing officer (BLM) may require the project proponent to provide a minimum of one year of baseline ambient air monitoring data for any pollutant(s) of concern as determined by BLM if no representative air monitoring data are available for the project area, or existing representative ambient air monitoring data are insufficient, incomplete, or do not meet minimum air monitoring standards set by the Alaska DEC or the EPA. If BLM determines that baseline monitoring is required, this pre-analysis data must meet Alaska DEC and EPA air monitoring standards, and cover the year immediately prior to the submittal. Pre-project monitoring may not be appropriate where the life of the project is less than one year.
- b. The BLM may require monitoring for the life of the project depending on the magnitude of potential air emissions from the project, proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by Alaska DEC or a federal land management agency), or population center, location within or proximity to a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during NEPA undertaken for the project.
- c. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the project proponent shall prepare (and submit for BLM approval) an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project, including

- reasonably foreseeable air pollutant emissions of criteria air pollutants, volatile organic compounds, hazardous air pollutants, and greenhouse gases estimated for each year for the life of the project. The BLM will use this estimated emissions inventory to identify pollutants of concern and to determine the appropriate level of air analysis to be conducted for the proposed project.
- d. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the BLM may require the proponent to provide an emissions reduction plan that includes a detailed description of operator committed measures to reduce project related air pollutant emissions including, but not limited to greenhouse gases and fugitive dust.
 - e. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the authorized officer may require air quality modeling for purposes of analyzing project direct, indirect or cumulative impacts to air quality. The BLM may require air quality modeling depending on the magnitude of potential air emissions from the project or activity, duration of the proposed action, proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by Alaska DEC or a federal land management agency), or population center, location within a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during NEPA undertaken for the project. The BLM will determine the information required for a project specific modeling analysis through the development of a modeling protocol for each analysis. The authorized officer will consult with appropriate federal, State, and/or local agencies regarding modeling to inform his/her modeling decision and avoid duplication of effort. The modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments, as well as other scientifically defensible significance thresholds (such as impacts to air quality related values, incremental cancer risks, etc.).
 - f. The BLM may require air quality mitigation measures and strategies within its authority (and in consultation with local, state, federal, and tribal agencies with responsibility for managing air resources) in addition to regulatory requirements and proponent committed

- emission reduction measures, and for emission sources not otherwise regulated by Alaska DEC or EPA, if the air quality analysis shows potential future impacts to NAAQS or AAAQS or impacts above specific levels of concern for air quality related values (AQRVs).
- g. If ambient air monitoring indicates that project-related emissions are causing or contributing to impacts that would cause unnecessary or undue degradation of the lands, cause exceedances of NAAQS, or fail to protect health (either directly or through use of subsistence resources), the authorized officer may require changes in activities at any time to reduce these emissions to comply with the NAAQS and/or minimize impacts to AQRVs. Within the scope of BLM's authority, the BLM may require additional emission control strategies to minimize or reduce impacts to air quality.
 - h. Publicly available reports on air quality baseline monitoring, emissions inventory, and modeling results developed in conformance with this best management procedure shall be provided by the project proponent to the North Slope Borough and to local communities and Tribes in a timely manner.

A-11 Best Management Practice

Objective: Ensure that permitted activities do not create human health risks through contamination of subsistence foods.

Requirement/Standard: A lessee proposing a permanent oil and gas development shall design and implement a monitoring study of contaminants in locally-used subsistence foods. The monitoring study shall examine subsistence foods for all contaminants that could be associated with the proposed development. The study shall identify the level of contaminants in subsistence foods prior to the proposed permanent oil and gas development and monitor the level of these contaminants throughout the operation and abandonment phases of the development. If ongoing monitoring detects a measurable and persistent increase in a contaminant in subsistence foods, the lessee shall design and implement a study to determine how much, if any, of the increase in the contaminant in subsistence foods originates from the lessee's activities. If the study determines that a portion of the increase in contamination in subsistence foods is caused by the lessee's activities, the authorized officer may require changes in the lessee's processes to reduce or eliminate emissions of the contaminant. The design of the study/studies must meet the approval of the authorized officer. The authorized officer may consult with appropriate federal, State, and North Slope Borough agencies prior to approving the study/studies design. The authorized officer may

require/authorize changes in the design of the studies throughout the operations and abandonment period, or terminate or suspend studies if results warrant.

A-12 Best Management Practice

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

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

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

Water Use for Permitted Activities

B-1 Best Management Practice

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

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

B-2 Best Management Practice

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

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

- a. Lakes with sensitive fish (i.e., any fish except ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; only ice aggregate may be removed from lakes that are ≤ 7 -feet deep.

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

Winter Overland Moves and Seismic Work

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

C-1 Best Management Practice

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

Requirement/Standard:

- a. Cross-country use of heavy equipment and seismic activities is prohibited within $\frac{1}{2}$ mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.
- b. Cross-country use of heavy equipment and seismic activity is prohibited within 1 mile of known or observed polar bear dens or seal

birthing lairs. Operators near coastal areas shall conduct a survey for potential polar bear dens and seal birthing lairs and consult with the USFWS and/or NOAA-Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.

C-2 Best Management Practice

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

Requirement/Standard:

- a. Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500 feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the authorized officer.
- b. Low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. Low-ground-pressure vehicles shall be selected and operated in a manner that eliminates direct impacts to the tundra by shearing, scraping, or excessively compacting the tundra mat. Note: This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.
- c. Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.
- d. To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.
- e. The location of ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.
- f. Motorized ground-vehicle use within the Colville River Special Area associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within an area that extends 1 mile west or northwest of the bluffs of the Colville River, and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and

tributaries of the Kogosukruk River from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain 1/2 mile away from known raptor nesting sites, unless authorized by the authorized officer.

C-3 Best Management Practice

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

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

C-4 Best Management Practice

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

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

C-5 Best Management Practice

Objective: Minimize the effects of high-intensity acoustic energy from seismic surveys on fish.

Requirement/Standard:

- a. When conducting vibroseis-based surveys above potential fish overwintering areas (water 6 feet deep or greater, ice plus liquid depth), operators shall follow recommendations by Morris and Winters (2005): only a single set of vibroseis shots should be conducted if possible; if multiple shot locations are required, these should be conducted with minimal delay; multiple days of vibroseis activity above the same overwintering area should be avoided if possible.
- b. When conducting air gun-based surveys in freshwater, operators shall follow standard marine mitigation measures that are applicable to fish (e.g., Minerals Management Service 2006): operators will use the lowest sound levels feasible to accomplish their data-collection needs;

- ramp-up techniques will be utilized (ramp-up involves the gradual increase in emitted sound levels beginning with firing a single air gun and gradually adding air guns until the desired operating level of the full array is obtained).
- c. When conducting explosive-based surveys, operators shall follow setback distances from fish-bearing waterbodies based on requirements outlined by Alaska Department of Fish and Game (1991).

Oil and Gas Exploratory Drilling

D-1 Lease Stipulation

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

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

D-2 Lease Stipulation

Objective: Minimize surface impacts from exploratory drilling.

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

Facility Design and Construction

E-1 Best Management Practice

Objective: Protect subsistence use and access to subsistence hunting and fishing areas and minimize the impact of oil and gas activities on air, land, water, fish, and wildlife resources.

Requirement/Standard: All roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to protect subsistence use and access to subsistence hunting and fishing areas. The authorized officer will consult with appropriate federal, State, and North Slope Borough regulatory and resources agencies prior to approving construction of roads. Subject to approval by the authorized officer, the construction, operation, and maintenance of oil and gas field roads is the responsibility of the lessee unless the construction, operation, and maintenance of roads are assumed by the appropriate governing entity.

E-2 Lease Stipulation

Objective: Protect fish-bearing water bodies, water quality, and aquatic habitats.

Requirement/Standard: Permanent oil and gas facilities, including roads, airstrips, and pipelines, are prohibited upon or within 500 feet as measured from the ordinary high water mark of fish-bearing waterbodies. Essential pipeline and road crossings will be permitted on a case-by-case basis. Note: Also refer to Stipulations/Best Management Practices K-1 and K-2. Construction camps are prohibited on frozen lakes and river ice. Siting of construction camps on river sand and gravel bars is allowed and encouraged. Where leveling of trailers or modules is required and the surface has a vegetative mat, leveling shall be accomplished through blocking rather than use of a bulldozer.

E-3 Lease Stipulation

Objective: Maintain free passage of marine and anadromous fish and protect subsistence use and access to subsistence hunting and fishing.

Requirement/Standard: Causeways and docks are prohibited in river mouths or deltas. Artificial gravel islands and bottom-founded structures are prohibited in river mouths or active stream channels on river deltas. Causeways, docks, artificial islands, and bottom-founded drilling structures shall be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program, developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, shall be required to address the objectives of water quality and free passage of fish.

E-4 Best Management Practice

Objective: Minimize the potential for pipeline leaks, the resulting environmental damage, and industrial accidents.

Requirement/Standard: All pipelines shall be designed, constructed, and operated under an authorized officer-approved Quality Assurance/Quality Control plan that is specific to the product transported and shall be constructed to accommodate the best available technology for detecting and preventing corrosion or mechanical defects during routine structural integrity inspections.

E-5 Best Management Practice

Objective: Minimize impacts of the development footprint.

Requirement/Standard: Facilities shall be designed and located to minimize the development footprint. Issues and methods that are to be considered include:

- a. use of maximum extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads;
- b. sharing facilities with existing development;
- c. collocation of all oil and gas facilities, except airstrips, docks, and seawater-treatment plants, with drill pads;
- d. integration of airstrips with roads;
- e. use of gravel-reduction technologies, e.g., insulated or pile-supported pads,
- f. coordination of facilities with infrastructure in support of offshore development.

Note: Where aircraft traffic is a concern, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations.

E-6 Best Management Practice

Objective: Reduce the potential for ice-jam flooding, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage.

Requirement/Standard: Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, reduce erosion, maintain natural drainage, and minimize adverse effects to natural stream flow. Note:

Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.

E-7 Best Management Practice

Objective: Minimize disruption of caribou movement and subsistence use.

Requirement/Standard: Pipelines and roads shall be designed to allow the free movement of caribou and the safe, unimpeded passage of the public while participating in subsistence activities. Listed below are the accepted design practices:

- a. Above ground pipelines shall be elevated a minimum of 7 feet as measured from the ground to the bottom of the pipeline at vertical support members.

- b. In areas where facilities or terrain may funnel caribou movement, ramps over pipelines, buried pipelines, or pipelines buried under roads may be required by the authorized officer after consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility).
- c. A minimum distance of 500 feet between pipelines and roads shall be maintained. Separating roads from pipelines may not be feasible within narrow land corridors between lakes and where pipelines and roads converge on a drill pad. Where it is not feasible to separate pipelines and roads, alternative pipeline routes, designs and possible burial within the road will be considered by the authorized officer.

E-8 Best Management Practice

Objective: Minimize the impact of mineral materials mining activities on air, land, water, fish, and wildlife resources.

Requirement/Standard: Gravel mine site design and reclamation will be in accordance with a plan approved by the authorized officer. The plan shall be developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies and consider:

- a. Locations outside the active flood plain.
- b. Design and construction of gravel mine sites within active flood plains to serve as water reservoirs for future use.
- c. Potential use of the site for enhancing fish and wildlife habitat.
- d. Potential storage and reuse of sod/overburden for the mine site or at other disturbed sites on the North Slope.

E-9 Best Management Practice

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

Requirement/Standard:

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

E-10 Best Management Practice

Objective: Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.

Requirement/Standard: Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.

E-11 Best Management Practice

Objective: Minimize the take of species, particularly those listed under the Endangered Species Act and BLM Special Status Species, from direct or indirect interaction with oil and gas facilities.

Requirement/Standard: In accordance with the guidance below, before the approval of facility construction, aerial surveys of the following species shall be conducted within any area proposed for development.

Special Conditions in Spectacled and/or Steller's Eiders Habitats:

- a. Surveys shall be conducted by the lessee for at least 3 years before authorization of construction, if such construction is within the USFWS North Slope eider survey area and at least 1 year outside that area. Results of aerial surveys and habitat mapping may require additional ground nest surveys. Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol. Information gained from these surveys shall be used to make infrastructure siting decisions as discussed in subparagraph b, below.
- b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall work with the USFWS and BLM early in the design process to site roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, location of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and management of high noise levels.
- c. To reduce the possibility of spectacled and/or Steller's eiders or other birds colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized:

1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;
 2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or
 3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.
- d. To reduce the likelihood of spectacled and/or Steller's eiders or other birds colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low flying birds. Such markings shall be developed through consultation with the USFWS.

Special Conditions in Yellow-billed Loon Habitats:

- e. Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August.
- f. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot (500-meter) buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.

Protections for Birds

- g. To reduce the possibility of birds colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases, which are to be few in number and limited in extent. Exceptions are limited to the following situations:
 1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;

2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or
 3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.
- h. To reduce the likelihood of birds colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS.

E-12 Best Management Practice

Objective: Use ecological mapping as a tool to assess wildlife habitat before development of permanent facilities to conserve important habitat types during development.

Requirement/Standard: An ecological land classification map of the development area shall be developed before approval of facility construction. The map will integrate geomorphology, surface form, and vegetation at a scale, level of resolution, and level of positional accuracy adequate for detailed analysis of development alternatives. The map shall be prepared in time to plan one season of ground-based wildlife surveys, if deemed necessary by the authorized officer, before approval of the exact facility location and facility construction.

E-13 Best Management Practice

Objective: Protect cultural and paleontological resources.

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

E-14 Best Management Practice

Objective: Ensure the passage of fish at stream crossings.

Requirement/Standard: To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices outlined in “Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain” by McDonald et al. (1994), “Fundamentals of Culvert Design for Passage of Weak-Swimming Fish” by Behlke et al. (1991), and other generally accepted best management procedures prescribed by the authorized officer. To adhere to these best management practices, at least 3 years of hydrologic and fish data shall be collected by the lessee for any proposed crossing of a stream whose structure is designed to occur, wholly or partially, below the stream’s ordinary high watermark. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream.

E-15 Best Management Practice

Objective: Prevent or minimize the loss of nesting habitat for cliff nesting raptors.

Requirement/Standard:

- a. Removal of greater than 100 cubic yards of bedrock outcrops, sand, and/or gravel from cliffs shall be prohibited.
- b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.

E-16 Best Management Practice

Objective: Prevent or minimize the loss of raptors due to electrocution by power lines.

Requirement/Standard: Comply with the most up-to-date industry-accepted suggested practices for raptor protection on power lines. Current accepted standards were published in *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* by the Avian Power Line Interaction Committee and are updated as needed.

E-17 Best Management Practice

Objective: Manage permitted activities to meet Visual Resource Management class objectives described below.

Class I: Natural ecological changes and very limited management activity are allowed. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II: The level of change to the characteristic landscape should be low. Management activities may be seen, but should not dominate the view of the casual observer. Any changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV: The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize impacts through location and design by repeating form, line, color, and texture.

Requirement/Standard: At the time of application for construction of permanent facilities, the lessee/permittee shall, after consultation with the authorized officer, submit a plan to best minimize visual impacts, consistent with the Visual Resource Management class for the lands on which facilities would be located. A photo simulation of the proposed facilities may be a necessary element of the plan.

E-18 Best Management Practice

Objective: Avoid and reduce temporary impacts to productivity from disturbance near Steller's and/or spectacled eider nests.

Requirement/Standard: Ground-level activity (by vehicle or on foot) within 200 meters of occupied Steller's and/or spectacled eider nests, from June 1 through August 15, will be restricted to existing thoroughfares, such as pads and roads. Construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels within 200 meters of occupied Steller's and/or spectacled eider nests will be prohibited. In instances where summer (June 1 through August 15) support/construction activity must occur off existing thoroughfares, USFWS-approved nest surveys must be conducted during mid-June prior to the approval of the activity. Collected data will be used to evaluate whether the action could occur based on employment of a 200-meter buffer around nests or if the activity would be delayed until after mid-August once ducklings are mobile

and have left the nest site. Also, in cases in which oil spill response training is proposed to be conducted within 200 meters of shore in riverine, marine, or inter-tidal areas, the BLM will work with the USFWS to schedule the training at a time that is not a sensitive nesting/brood-rearing period or require that nest surveys be conducted in the training area prior to the rendering a decision on approving the training. The protocol and timing of nest surveys for Steller's and/or spectacled eiders will be determined in cooperation with the USFWS, and must be approved by the USFWS. Surveys should be supervised by biologists who have previous experience with Steller's and/or spectacled eider nest surveys.

E-19 Best Management Practice

Objective: Provide information to be used in monitoring and assessing wildlife movements during and after construction.

Requirement/Standard: A representation, in the form of ArcGIS-compatible shape-files, of all new infrastructure construction shall be provided to the authorized officer. During the planning and permitting phase, shape-files representing proposed locations shall be provided. Within 6 months of construction completion, shape-files (within GPS accuracy) of all new infrastructure shall be provided. Infrastructure includes all gravel roads and pads, facilities built on pads, pipelines and independently constructed powerlines (as opposed to those incorporated in pipeline design). Gravel pads shall be included as polygon feature. Roads, pipelines, and powerlines may be represented as line features but must include ancillary data to denote width, number pipes, etc. Poles for power lines may be represented as point features. Ancillary data shall include construction beginning and ending dates.

Use of Aircraft for Permitted Activities

F-1 Best Management Practice

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

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

- a. Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within ½ mile of cliffs identified as raptor nesting sites from April 15 through August 15 and an altitude of at least 1,500 feet above ground level when within ½ mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.
- b. Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer. The BLM will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.
- c. Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Proposed aircraft use plans should be reviewed by appropriate federal, State, and borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the authorized officer if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered to allow larger aircraft to be employed, resulting in fewer flights to the facility.
- d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.
- e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area (Map 2) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and

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

Oil Field Abandonment

G-1 Lease Stipulation

Objective: Ensure long-term reclamation of land to its previous condition and use.

Requirement/Standard: Prior to final abandonment, land used for oil and gas infrastructure—including but not limited to well pads, production facilities, access roads, and airstrips—shall be reclaimed to ensure eventual restoration of ecosystem function. The leaseholder shall develop and implement an abandonment and reclamation plan approved by the BLM. The plan shall describe short-term stability, visual, hydrological, and productivity objectives and steps to be taken to ensure eventual ecosystem restoration to the land's previous hydrological, vegetative, and habitat condition. The BLM may grant exceptions to satisfy stated environmental or public purposes.

Subsistence Consultation for Permitted Activities

H-1 Best Management Practice

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

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

- a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the North Slope Borough, and the National Petroleum Reserve-Alaska Subsistence Advisory Panel to discuss the siting, timing, and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes.
- b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to the National Petroleum Reserve-Alaska Subsistence Advisory Panel for review and comment. The applicant must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it.
- c. A plan shall be developed that shows how the activity, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan will also describe the methods used to monitor the effects of the activity on subsistence use. The plan shall be submitted to the BLM as part of the plan of operations. The plan should address the following items:
 1. A detailed description of the activity(ies) to take place (including the use of aircraft).
 2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the authorized officer during the consultation process.

3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.
 4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.
 5. Procedures necessary to facilitate access by subsistence users to the permittees' area of activity or facilities during the course of conducting subsistence activities.
- d. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the authorized officer and NPR-A Subsistence Advisory Panel.
 - e. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the NPR-A shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.
 - f. Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts on the availability of marine mammals to subsistence hunters.
 - g. All vessels over 50 ft. in length engaged in operations requiring a BLM permit must have an Automatic Identification System (AIS) transponder system on the vessel.

H-2 Best Management Practice

Objective: Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.

Requirement/Standard: In addition to the consultation process described in Best Management Practice H-1 for permitted activities, before activity to conduct geophysical (seismic) exploration commences, applicants shall notify the local search and rescue organizations of proposed seismic survey

locations for that operational season. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite used for subsistence purposes and located within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.

- a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will notify all potentially affected subsistence-use cabin and campsite users.
- b. The official recognized list of subsistence-use cabin and campsite users is the North Slope Borough's most current inventory of cabins and campsites, which have been identified by the subsistence users' names.
- c. A copy of the notification, a map of the proposed exploration area, and the list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.
- d. The authorized officer will prohibit seismic work within 1 mile of any known subsistence-use cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the authorized officer. (Regardless of the consultation outcome, the authorized officer will prohibit seismic work within 300 feet of a known subsistence-use cabin or campsite.)
- e. The permittee shall notify the appropriate local search and rescue (e.g., Nuiqsut Search and Rescue, Atqasuk Search and Rescue) of their current operational location within the NPR-A on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips and access routes accordingly. Identification of the appropriate search and rescue offices to be contacted can be obtained from the coordinator of the NPR-A Subsistence Advisory Panel in the BLM's Arctic Field Office.

H-3 Best Management Practice

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

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

Orientation Programs Associated with Permitted Activities

I-1 Best Management Practice

Objective: Minimize cultural and resource conflicts.

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

- a. provide sufficient detail to notify personnel of applicable stipulations and best management practices as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.
- b. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.
- c. Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.
- d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.
- e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.

- f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.
- g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.
- h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.
- i. Include a module discussing bear interaction plans to minimize conflicts between bears and humans.
- j. Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to on-site personnel.
- k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the North Slope Borough Health Department for review and comment.
- l. Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the North Slope Borough Health Department for review and comment.

Endangered Species Act—Section 7 Consultation Process

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

Additional Protections that Apply in Select Biologically Sensitive Areas

K-1 Lease Stipulation/Best Management Practice – Rivers

Note: This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternatives, K-1 would be a best management practice. The decision indicated below in subparagraphs (a) and (d) modify Protection 1 of the Colville River Special Area Management Plan by widening its applicability to 2 miles.

Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts to subsistence cabin and campsites; the disruption of subsistence activities; and impacts to scenic and other resource values.

Requirement/Standard: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and adjacent to the rivers listed below at the distances identified. (Gravel mines may be located within the active floodplain consistent with Best Management Practice E-8). On a case-by case basis, and in consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings to the main channel will be permitted through setback areas. The below setbacks may not be practical within river deltas; in such deltas, permanent facilities shall be designed to withstand a 200-year flood event. In the below list, if no upper limit for the setback is indicated, the setback extends to the head of the stream as identified in the National Hydrography Dataset.

- a. **Colville River:** a 2-mile setback from the boundary of NPR-A where the river determines the boundary along the Colville River as determined by cadastral survey to be the highest high watermark on the left (western or northern) bank and from both banks' ordinary high watermark where BLM-manages both sides of the river up through T5S, R30W, U.M. Above that point to its source at the juncture of Thunder and Storm creeks the setback will be ½ mile. Note: The planning area excludes conveyed Native lands along the lower reaches of the Colville River. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. Note: This provision does not apply to intercommunity or other permanent roads

- constructed with public funds for general transportation purposes, though the BLM would encourage minimal use of the setback area. This preserves the opportunity to plan, design, and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within National Petroleum Reserve-Alaska.
- b. **Ikpikpuk River:** a 2-mile setback from of the ordinary high watermark of the Ikpiuk River extending from the mouth upstream through T7 N, R11W, U.M.; above that the setback would be for 1 mile to the confluence of the Kigalik River and Maybe Creek.
 - c. **Miguakiak River:** a ½-mile setback from the ordinary high watermark.
 - d. **Kikiakrorak and Kogosukruk Rivers:** A 2-mile setback from the top of the bluff (or ordinary high watermark if there is no bluff) on the Kikiakrorak River downstream from T2N., R4W, U.M. and on the Kogosukruk River (including Branch of Kogosukruk River, Henry Creek, and two unnamed tributaries off the southern bank) downstream from T2N, R3W, U.M. The setback from these streams in the named townships and further upstream as applicable will be a ½-mile from the top of the bluff or bank if there is no bluff.
 - e. **Fish Creek:** a 3-mile setback from the highest high watermark of the creek downstream from the eastern edge of section 31, T11N, R1E., U.M. and a ½-mile setback from the bank's highest high watermark farther upstream.
 - f. **Judy Creek:** a ½-mile setback from the ordinary high watermark.
 - g. **Ublutuoch (Tijmiasugvik) River:** a ½-mile setback from the ordinary high water mark.
 - h. **Alaktak River:** a 1-mile setback from the ordinary high water mark.
 - i. **Chipp River:** a 1-mile setback from the ordinary high water mark.
 - j. **Oumalik River:** a ½-mile setback from the Oumalik River ordinary high water mark from the mouth upstream to section 5, T8N, R14W, U.M., and a ½ mile setback in and above section 5, T8N, R14W, U.M.
 - k. **Titaluk River:** a 2-mile setback from the ordinary high water mark from its confluence with the Ikpiuk River upstream through T7N, R12W, U.M.; above that point the setback would be ½-mile from the ordinary high water mark.
 - l. **Kigalik River:** a ½-mile setback from the ordinary high water mark.
 - m. **Maybe Creek:** a ½-mile setback from the ordinary high water mark.
 - n. **Topagoruk River:** a 1-mile setback from the ordinary high water mark.

- o. **Ishuktak Creek:** a ½-mile setback from the ordinary high water mark.
- p. **Meade River:** a 1-mile setback from the ordinary high water mark on BLM-managed lands.
- q. **Usuktuk River:** a 1-mile setback from the ordinary high water mark on BLM-managed lands.
- r. **Pikroka Creek:** a ½-mile setback from the ordinary high water mark.
- s. **Nigisaktuvik River:** a 1-mile setback from the ordinary high water mark.
- t. **Inaru River:** a 1-mile setback from the ordinary high water mark.
- u. **Kucheak Creek:** a ½-mile setback from the ordinary high water mark.
- v. **Avalik River:** a 1-mile setback from the ordinary high water mark.
- w. **Niklavik Creek:** a ½-mile setback from the ordinary high water mark.
- x. **Kugrua River:** a ½-mile setback from the ordinary high water mark.
- y. **Kungok River:** a 1-mile setback from the ordinary high water mark on BLM-managed lands.
- z. **Kolipsun Creek:** a ½-mile setback from the ordinary high water mark upstream through T13N, R28W, U.M.
- aa. **Maguriak Creek:** a ½-mile setback from the ordinary high water mark upstream through T12N, R29W, U.M.
- ab. **Mikigealiak River:** a ½-mile setback from the ordinary high water mark upstream through T12N, R30W, U.M.
- ac. **Kuk River:** a 1-mile setback from the ordinary high water mark on BLM-managed lands.
- ad. **Ketik River:** a 1-mile setback from the ordinary high water mark.
- ae. **Kaolak River:** a 1-mile setback from the ordinary high water mark.
- af. **Ivisaruk River:** a 1-mile setback from the ordinary high water mark.
- ag. **Nokotlek River:** a ½-mile setback from the ordinary high water mark.
- ah. **Ongorakvik River:** a ½-mile setback from the ordinary high water mark.
- ai. **Tunalik River:** a ½-mile setback from the ordinary high water mark.
- aj. **Avak River:** a ½-mile setback from the ordinary high water mark within the NPR-A.
- ak. **Nigu River:** a ½-mile setback from the ordinary high water mark from the confluence with the Etivluk River upstream to the boundary of NPR-A
- al. **Etivluk River:** a ½-mile setback from the ordinary high water mark.
- am. **Ipnarik River:** a ½-mile setback from the ordinary high water mark.
- an. **Kuna River:** a ½-mile setback from the ordinary high water mark.
- ao. **Kiligwa River:** a ½-mile setback from the ordinary high water mark.

- ap. **Nuka River:** a ½-mile setback from the ordinary high water mark.
- aq. **Driftwood Creek:** a ½-mile setback from the ordinary high water mark.
- ar. **Utukok River:** a 1-mile setback from the ordinary high water mark within the NPR-A.
- as. **Awuna River:** a ½-mile setback from the ordinary high water mark.
- at. **Carbon Creek:** a ½-mile setback from the ordinary high water mark.
- au. **Kokolik River:** a 1-mile setback from the ordinary high water mark within the NPR-A.
- av. **Keolok Creek:** a ½-mile setback from the ordinary high water mark.

The decisions in subparagraphs K-1(a) and K-1(d) modify Colville River Management Plan Protection 1 by widening the setback in that measure to 2 miles. Protection 1 thus is modified to the following:

Colville River Special Area Management Plan-Protection 1

Objective: Minimize the loss of arctic peregrine falcon nesting habitat in the Colville River Special Area.

Requirement/Standard: To minimize the direct loss of arctic peregrine falcon nesting habitat and to protect nest sites in the Colville River Special Area the following protective measures apply: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the stream bed and adjacent to the rivers listed below at the distances identified. On a case-by-case basis, and in consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate; based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings perpendicular to the main channel will be permitted through setback areas.

- a. Colville River: downstream of the Etivluk River a continuous 2-mile setback measured from the highest high watermark on the left bank (facing downstream); upstream of the Etivluk River a 2-mile setback measured from the ordinary high watermark of the bank on both sides of the river. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes.
- b. Kikiakrorak River: downstream from T2N, R4W, U.M., a continuous 2-mile setback as measured from the top of the bluff (or bank if there is no bluff) of both sides of the river.

- c. Kogosukruk River: downstream from T2N, R3W, U.M., a continuous 2-mile setback as measured from the top of the bluff (or bank if there is no bluff) of both sides of the river and several of its tributaries.

K-2 Lease Stipulation/Best Management Practice – Deep Water Lakes

Note: This measure would be applied to relevant new leases. On lands unavailable for leasing, K-2 would be a best management practice.

Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of deep water lakes; the loss of spawning, rearing or over wintering habitat for fish; the loss of cultural and paleontological resources; impacts to subsistence cabin and campsites; and the disruption of subsistence activities.

Requirement/Standard: Generally, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited on the lake or lakebed and within ¼ mile of the ordinary high water mark of any deep lake as determined to be in lake zone III (i.e., depth greater than 13 feet [4 meters]; Mellor 1985). On a case-by-case basis in consultation with federal, State and North Slope Borough regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline(s), road crossings, and other permanent facilities may be considered through the permitting process in these areas where the lessee can demonstrate on a site-specific basis that impacts will be minimal.

K-3 Best Management Practice – Kogru River, Dease Inlet, Admiralty Bay, Elson Lagoon, Peard Bay, Wainwright Inlet/Kuk River, and Kasegaluk Lagoon, and their associated Islands

Note: None of the area is available for oil and gas leasing or exploratory drilling. Therefore, K-3 will apply as a best management practice.

Objective: Protect fish and wildlife habitat (including, but not limited to, that for waterfowl and shorebirds, caribou insect-relief, and marine mammals), preserve air and water quality, and minimize impacts to subsistence activities and historic travel routes on the major coastal waterbodies.

Requirement/Standard (Development): With the exception of linear features such as pipelines, no permanent oil and gas facilities are permitted on or under the water within ¾ mile seaward of the shoreline (as measured from mean high tide) of the major coastal waterbodies or the natural coastal islands (to the extent that the seaward subsurface is within NPR-A).

Elsewhere, permanent facilities within the major coastal waterbodies will

only be permitted on or under the water if they can meet all the following criteria:

- a. Design and construction of facilities shall minimize impacts to subsistence uses, travel corridors, seasonally concentrated fish and wildlife resources.
- b. Daily operational activities, including use of support vehicles, watercraft, and aircraft traffic, alone or in combination with other past, present, and reasonably foreseeable activities, shall be conducted to minimize impacts to subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources.
- c. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, bridges or causeways, shall be sited and constructed so as to not pose a hazard to navigation by the public using traditional high-use subsistence-related travel routes into and through the major coastal waterbodies as identified by the North Slope Borough.
- d. Demonstrated year-round oil spill response capability, including the capability of adequate response during periods of broken ice or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include seasonal drilling restrictions, improvements in blowout prevention technology, equipment and/or changes in operational procedures, and “top-setting” of hydrocarbon-bearing zones.
- e. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic that add to impacts or further compound “direct spill” related impacts on area resources and subsistence uses.
- f. Before conducting open water activities, the permittee shall consult with the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.

K-4a Best Management Practice – Goose Molting Area

Note: Except for less than 10,000 acres east of the mouth of the Ikpikpuk River, new non-subsistence infrastructure would be prohibited in the goose molting area. None of the area is available for oil and gas leasing or exploratory drilling.

Objective: Minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.

Requirement/Standard (General): Within the Goose Molting Area no permanent oil and gas facilities, except for pipelines, will be allowed within 1 mile of the shoreline of goose molting lakes. No waiver, exception, or modification will be considered. Prior to the permitting of a pipeline in the Goose Molting Area, a workshop will be convened to determine the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, state, and North Slope Borough representatives. In addition, only “in field” roads will be authorized as part of oil and gas field development.

Requirement/Standard (Development): In the Goose Molting Area, the following standards will be followed for permitted activities:

- a. Within the Goose Molting Area from June 15 through August 20, all off-pad activities and major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended (see also Best Management Practice K-5(d)), unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb molting geese during the period when geese are present.
- b. Water extraction from any lakes used by molting geese shall not alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins. Considerations will be given to seasonal use by operators (generally in winter) and geese (generally in summer), as well as recharge to lakes from the spring snowmelt.
- c. Oil and gas activities will avoid altering (i.e., damage or disturbance of soils, vegetation, or surface hydrology) critical goose-feeding habitat types along lakeshore margins (grass/sedge/moss) and salt marsh habitats.
- d. Permanent oil and gas facilities (including gravel roads, pads, and airstrips, but excluding pipelines) and material sites will be sited outside the identified buffers and restricted surface occupancy areas. Additional limits on development footprint apply
- e. Between June 15 and August, 20 within the Goose Molting Area, oil and gas facilities shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any Goose Molting Area lake, as identified by the authorized officer in

- consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies.
- f. Strategies to minimize ground traffic shall be implemented from June 15 through August 20. These strategies may include limiting trips, use of convoys, different vehicle types, etc. to the extent practicable. The permittee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.
 - g. Within the Goose Molting Area aircraft use (including fixed wing and helicopter) shall be restricted from June 15 through August 20 unless doing so endangers human life or violates safe flying practices. Restrictions may include: (1) limiting flights to two round-trips/week, and (2) limiting flights to corridors established by the BLM after discussions with appropriate federal, State, and North Slope Borough regulatory and resource agencies. The permittee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. Note: This site-specific best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.
 - h. Any permit for development issued under this IAP/EIS will include a requirement for the permittee to conduct monitoring studies necessary to adequately determine consequences of development and any need for change to mitigations. Monitoring studies will be site- and development-specific within a set of over-arching guidelines developed by the BLM after conferring with appropriate federal, State, North Slope Borough agencies. The study(ies) will include the construction period and will continue for a minimum of 3 years after construction has been completed and production has begun. The monitoring studies will be a continuation of evaluating the effectiveness of Best Management Practice K-4a's requirements in meeting the objective of K-4a and determine if any changes to the best management practice or any project specific mitigation(s) are

necessary. If changes are determined to be necessary, the BLM, with the permittee and/or their representative, will conduct an assessment of the feasibility of altering development operation (e.g., reduced human activity, visibility barriers, noise abatement). Any changes determined necessary will be implemented prior to authorization of any new construction.

K-4b Best Management Practice – Brant Survey Area

Objective: Minimize the loss or alteration of habitat for, or disturbance of, nesting and brood rearing brant in the Brant Survey Area. None of the area is available for oil and gas leasing or exploratory drilling.

Requirement/Standard:

- a. Aerial surveys for brant nesting colonies and brood-rearing areas shall be conducted for a minimum of 2 years before authorization of construction of permanent facilities. At a minimum, the survey area shall include the proposed development site(s) (i.e., the footprint) and the surrounding ½-mile area. These surveys shall be conducted following accepted BLM protocol.
- b. Development may be prohibited or activities curtailed within ½-mile of all identified brant nesting colonies and brood-rearing areas identified during the 2-year survey

K-5 Best Management Practice – Teshekpuk Lake Caribou Habitat Area

Note: None of the area is available for oil and gas leasing or exploratory drilling. Therefore, K-5 will apply as a best management practice. Portions of K-5 that apply to permanent infrastructure are only relevant to the portion of the Teshekpuk Lake Caribou Habitat Area available to application for such infrastructure, i.e., to those areas outside of the approximately 1.1 million acres near the lake where no new non-subsistence permanent infrastructure will be permitted.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions the Teshekpuk Lake Caribou Habitat Area that are essential for all season use, including calving and rearing, insect-relief, and migration.

Requirement/Standard: In the Teshekpuk Lake Caribou Habitat Area the following standards will be applied to permitted activities:

- a. Before authorization of construction of permanent facilities (limited as they may be by surface occupancy restrictions established in this decision), the permittee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the

Teshekpuk Caribou Herd has been completed within the last 10 years. The study shall include a minimum of four years of current data on the Teshekpuk Caribou Herd movements and the study design shall be approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. The study should provide information necessary to determine facility (including pipeline) design and location. Permittee may submit individual study proposals or they may combine with other permittees in the area to do a single, joint study for the entire Teshekpuk Lake Caribou Habitat Area. Study data may be gathered concurrently with other activities as approved by the authorized officer and in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. A final report of the study results will be prepared and submitted. Prior to the permitting of a pipeline in the Teshekpuk Lake Caribou Habitat Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife (specifically the Teshekpuk Caribou Herd) and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. All of these modifications will increase protection for caribou and other wildlife that utilize the Teshekpuk Lake Caribou Habitat Area during all seasons.

- b. Within the Teshekpuk Lake Caribou Habitat Area, permittee shall orient linear corridors when laying out oil and gas field developments to address migration and corralling effects and to avoid loops of road and/or pipeline that connect facilities.
- c. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required by the authorized officer, after consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, in the Teshekpuk Lake Caribou Habitat Area where pipelines potentially impede caribou movement.
- d. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended within Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb caribou during calving and insect-relief

- periods. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. The permittee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.
- e. The following ground and air traffic restrictions shall apply in the areas and time periods indicated. Ground traffic restrictions apply to permanent oil and gas-related roads:
1. Within the Teshekpuk Lake Caribou Habitat Area, from May 20 through August 20, traffic speed shall not exceed 15 miles per hour when caribou are within ½ mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The permittee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.
 2. The permittee or a contractor shall observe caribou movement from May 20 through August 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped:
 - a. temporarily to allow a crossing by 10 or more caribou. Sections of road will be evacuated whenever an attempted crossing by a large number of caribou appears to be imminent. The permittee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation.
 - b. by direction of the authorized officer throughout a defined area for up to four weeks to prevent displacement of calving caribou. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.
 3. Major equipment, materials, and supplies to be used at oil and gas work sites in the Teshekpuk Lake Caribou Habitat Area shall be stockpiled prior to or after the period of May 20 through August 20 to minimize road traffic during that period.
 4. Within the Teshekpuk Lake Caribou Habitat Area aircraft use (including fixed wing and helicopter) shall be restricted from May

20 through August 20 unless doing so endangers human life or violates safe flying practices. Authorized users of the NPR-A may be restricted from using aircraft larger than a Twin Otter, and limited to an average of one fixed-wing aircraft takeoff and landing per day per airstrip, except for emergency purposes. Restrictions may include prohibiting the use of aircraft larger than a Twin Otter by authorized users of the NPR-A, including oil and gas permittee, from May 20 through August 20 within the Teshekpuk Lake Caribou Habitat Area, except for emergency purposes. The permittee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.

5. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, and 2,000 feet above ground level over the Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless doing so endangers human life or violates safe flying practices. Caribou wintering ranges will be defined annually by the authorized officer in consultation with the Alaska Department of Fish and Game. This best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.

K-6 Lease Stipulation/Best Management Practice – Coastal Area

Note: This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternatives, K-6 would be a best management practice.

Objective: Protect coastal waters and their value as fish and wildlife habitat (including, but not limited to, that for waterfowl, shorebirds, and marine

mammals), minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; protect the summer and winter shoreline habitat for polar bears, and the summer shoreline habitat for walrus and seals; prevent loss of important bird habitat and alteration or disturbance of shoreline marshes; and prevent impacts to subsistence resources and activities.

Requirement/Standard:

- a. Exploratory well drill pads, production well drill pads, or a central processing facility for oil or gas would not be allowed in coastal waters or on islands between the northern boundary of the Reserve and the mainland, or in inland areas within one mile of the coast. (Note: This would include the entirety of the Kasegaluk Lagoon and Peard Bay Special Areas.) Other facilities necessary for oil and gas production within NPR-A that necessarily must be within this area (e.g., barge landing, seawater treatment plant, or spill response staging and storage areas) would not be precluded. Nor would this stipulation preclude infrastructure associated with offshore oil and gas exploration and production or construction, renovation, or replacement of facilities on existing gravel sites. Lessees/permittees shall consider the practicality of locating facilities that necessarily must be within this area at previously occupied sites such as various Husky/USGS drill sites and Distant Early Warning-Line sites. All lessees/permittees involved in activities in the immediate area must coordinate use of these new or existing sites with all other prospective users. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the North Slope Borough, and local whaling captains associations to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope. In a case in which the BLM authorizes a permanent oil and gas facility within the Coastal Area, the lessee/permittee shall develop and implement a monitoring plan to assess the effects of the facility and its use on coastal habitat and use.
- b. Marine vessels used as part of a BLM-authorized activity shall maintain a 1-mile buffer from the shore when transiting past an aggregation of seals (primarily spotted seals) using a terrestrial haulout unless doing so would endanger human life or violate safe boating practices. Marine vessels shall not conduct ballast transfers or discharge any matter into the marine environment within 3 miles of the coast except when necessary for the safe operation of the vessel.

- c. Marine vessels used as part of a BLM-authorized activity shall maintain a ½-mile buffer from shore when transiting past an aggregation of walrus using a terrestrial haulout.

K-7 Lease Stipulation/Best Management Practice - Colville River Special Area

Note: This measure would be applied to relevant new leases. On lands unavailable for leasing, K-7 would be a best management practice.

Objective: Prevent or minimize loss of raptor foraging habitat (also see Lease Stipulation K-1).

Requirement/Standard: If necessary to construct permanent facilities within the Colville River Special Area, all reasonable and practicable efforts shall be made to locate permanent facilities as far from raptor nests as feasible. Additionally, within 15 miles of raptor nest sites, significant alteration of high quality foraging habitat shall be prohibited unless the lessee can demonstrate on a site-specific basis that impacts would be minimal. Of particular concern are ponds, lakes, wetlands, and riparian habitats. Note: On a case-by-case basis, and in consultation with appropriate federal and State regulatory and resource agencies, essential pipeline and road crossings will be permitted through the Colville River Special Area where no other feasible or prudent options are available.

K-8 Best Management Practice - Pik Dunes

Note: None of the area is available for oil and gas leasing or exploratory drilling. Therefore, K-8 will apply as a best management practice.

Objective: Retain unique qualities of the Pik Dunes, including geologic and scenic uniqueness, insect-relief habitat for caribou, and habitat for several uncommon plant species.

Requirement/Standard: Surface structures, except approximately perpendicular pipeline crossings and ice pads, are prohibited within the Pik Dunes.

K-9 Best Management Practice – Teshekpuk Lake Caribou Movement Corridor

Note: None of the area is available for oil and gas leasing or exploratory drilling. Therefore, K-9 will apply as a best management practice. All of the former movement corridor northwest of Teshekpuk Lake and all but the eastern-most part of the other corridor that lies north of the Kogru River are within an area prohibiting new non-subsistence infrastructure. Therefore,

this best management practice only applies to the lands in the former corridor north of the Kogru River in Ts. 14-15 N., R. 2 W., U.M.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and rearing, insect-relief, and migration) in the area extending from the eastern shore of Teshekpuk Lake eastward to the Kogru River.

Requirement/Standard: Within the Teshekpuk Lake Caribou Movement Corridor, no permanent oil and gas facilities, except for pipelines or other infrastructure associated with offshore oil and gas exploration and production, will be allowed. Prior to the permitting of permanent oil and gas infrastructure in the Caribou Movement Corridor, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives.

K-10 Best Management Practice – Southern Caribou Calving Area

Note: None of the area is available for oil and gas leasing or exploratory drilling. Therefore, K-10 will apply as a best management practice. All but the eastern-most part of the former Southern Caribou Calving Area lies within an area prohibiting new non-subsistence infrastructure. Therefore, this best management practice only applies to the lands in the former area T. 14 N., Rs. 1-2 W., U.M.; T. 14 N., R. 1 E., U.M; and T. 15 N., R. 2 W., U.M.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and post calving, and insect-relief) in the area south/southeast of Teshekpuk Lake.

Requirement/Standard: Within the Southern Caribou Calving Area, no permanent oil and gas facilities, except pipelines or other infrastructure associated with offshore oil and gas exploration and production, will be allowed. Prior to the permitting of permanent oil and gas infrastructure in the Southern Caribou Calving Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives.

K-11 Lease Stipulation/Best Management Practice – Western Arctic Herd Habitat Area

Note: This measure would be applied to relevant new leases. On lands unavailable for leasing, K-11 would be a best management practice. Portions of K-11 that apply to permanent infrastructure are only relevant to the northern portion of the Utukok River Uplands Special Area available to application for such infrastructure.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements through the Utukok River Uplands Special Area that are essential for all season use, including calving and rearing, insect-relief, and migration.

Requirement/Standard: In the Utukok River Uplands Special Area the following standards will be applied to permitted activities:

- a. Before authorization of construction of permanent facilities, the lessee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the Western Arctic Herd has been completed within the last 10 years. The study shall include a minimum of four years of current data on the Western Arctic Herd's movements and the study design shall be approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies and the Western Arctic Caribou Herd Working Group. The study should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Utukok River Uplands Special Area. Study data may be gathered concurrently with other activities as approved by the authorized officer and in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. A final report of the study results will be prepared and submitted. Prior to the permitting of a pipeline in the Utukok River Uplands Special Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife (specifically the Western Arctic Herd) and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. All of these modifications will increase protection for caribou and other wildlife that utilize the Utukok River Uplands Special Area during all seasons.
- b. Within the Utukok River Uplands Special Area, lessees shall orient linear corridors when laying out oil and gas field developments to

- address migration and corralling effects and to avoid loops of road and/or pipeline that connect facilities.
- c. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required by the authorized officer, after consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, in the Utukok River Uplands Special Area where pipelines potentially impede caribou movement.
 - d. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended within Utukok River Uplands Special Area from May 20 through August 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb caribou during calving and insect-relief periods. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. The lessee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.
 - e. The following ground and air traffic restrictions shall apply to permanent oil and gas-related roads in the areas and time periods indicated:
 - 1. Within the Utukok River Uplands Special Area, from May 20 through August 20, traffic speed shall not exceed 15 miles per hour when caribou are within ½ mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.
 - 2. The lessee or a contractor shall observe caribou movement from May 20 through August 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped:
 - a. Temporarily to allow a crossing by 10 or more caribou.
Sections of road will be evacuated whenever an attempted

crossing by a large number of caribou appears to be imminent.

The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation.

- b. By direction of the authorized officer throughout a defined area for up to four weeks to prevent displacement of calving caribou.

The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.

- 3. Major equipment, materials, and supplies to be used at oil and gas work sites in the Utukok River Uplands Special Area shall be stockpiled prior to or after the period of May 20 through August 20 to minimize road traffic during that period.
- 4. Within the Utukok River Uplands Special Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through August 20 unless doing so endangers human life or violates safe flying practices. Authorized users of the NPR-A may be restricted from using aircraft larger than a Twin Otter, and limited to an average of one fixed-wing aircraft takeoff and landing per day per airstrip, except for emergency purposes. Restrictions may include prohibiting the use of aircraft larger than a Twin Otter by authorized users of the NPR-A, including oil and gas lessees, from May 20 through August 20 within the Utukok River Uplands Special Area, except for emergency purposes. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.
- 5. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, and 2,000 feet above ground level over the Utukok River Uplands Special Area from May 20 through August 20, unless doing so endangers human life or violates safe flying practices. Caribou wintering ranges will be

defined annually by the authorized officer in consultation with the Alaska Department of Fish and Game. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.

Summer Vehicle Tundra Access

L-1 Best Management Practice

Objective: Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.

Requirement/Standard: On a case-by-case basis, BLM may permit low-ground-pressure vehicles to travel off of gravel pads and roads during times other than those identified in Best Management Practice C-2a. Permission for such use would only be granted after an applicant has:

- a. Submitted studies satisfactory to the authorized officer of the impacts on soils and vegetation of the specific low-ground-pressure vehicles to be used. These studies should reflect use of such vehicles under conditions similar to those of the route proposed for use and should demonstrate that the proposed use would have no more than minimal impacts to soils and vegetation.
- b. Submitted surveys satisfactory to the authorized officer of subsistence uses of the area as well as of the soils, vegetation, hydrology, wildlife and fish (and their habitats), paleontological and archaeological resources, and other resources as required by the authorized officer.
- c. Designed and/or modified the use proposal to minimize impacts to the authorized officer's satisfaction. Design steps to achieve the objectives and based upon the studies and surveys may include, but not be limited to, timing restrictions (generally it is considered inadvisable to conduct tundra travel prior to August 1 to protect ground-nesting birds), shifting of work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring. At the discretion of the authorized officer, the plan for summer tundra vehicle access may be included as part of the spill

prevention and response contingency plan required by 40 CFR 112 (Oil Pollution Act) and Best Management Practice A-4.

General Wildlife and Habitat Protection

M-1 Best Management Practice

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

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

M-2 Best Management Practice

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

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

M-3 Best Management Practice

Objective: Minimize loss of populations of, and habitat for, plant species designated as Sensitive by the BLM in Alaska.

Requirement/Standard: If a development is proposed in an area that provides potential habitat for a BLM Sensitive Plant Species, the development proponent would conduct surveys at appropriate times of the summer season and in appropriate habitats for the Sensitive Plant Species that might occur there. The results of these surveys will be submitted to the BLM with the application for development.

M-4 Best Management Practice

Objective: Minimize loss of individuals of, and habitat for, mammalian species designated as Sensitive by the BLM in Alaska.

Requirement/Standard: If a development is proposed in an area that provides potential habitat for the Alaska tiny shrew, the development proponent would conduct surveys at appropriate times of the year and in appropriate

habitats in an effort to detect the presence of the shrew. The results of these surveys will be submitted to BLM with the application for development.

APPENDIX B: MODIFICATIONS AND CLARIFICATIONS

The following describes clarifications and minor modifications that BLM has made in this decision to the Preferred Alternative presented in the Final IAP/EIS. (Modifications that have been made to correct sentence structure, grammatical errors, sub-paragraph letters, and other non-substantive errors are not discussed below.)

General

Some language has been added clarifying the applicability of K-stipulations and best management practices in areas unavailable for leasing or in which no new non-subsistence permanent infrastructure would be permitted.

Some protective measures in Table 2-3 in the Final IAP/EIS were listed as Stipulation/Best Management Practice and reference was made in the measure to lessee(s), the correct term to be applied when incorporated into a lease. If this ROD would not make any of the applicable lands available for leasing, lessee(s) has been changed to permittee(s).

Some stipulation and best management practice numbers have been altered.

- The Final IAP/EIS's Best Management Practice E-20 has been re-designated as Best Management Practice E-17. There had been a Best Management Practice E-17 only in Alternative A in the Final IAP/EIS; re-designating the Final IAP/EIS's Best Management Practice E-20 as E-17 avoids a gap in the series of stipulations and best management practices.
- The Final IAP/EIS's Stipulation K-3a did not apply to the Preferred Alternative, though Stipulation K-3b did. Stipulation K-3b has been re-designated K-3 in the ROD.
- The Final IAP/EIS's Stipulation K-5b did not apply to the Preferred Alternative, though Stipulation K-5a did. Stipulation K-5a has been re-designated K-5 in the ROD.
- The Final IAP/EIS's Stipulation K-8b did not apply to the Preferred Alternative, though Stipulation K-8a did. Stipulation K-8a has been re-designated K-8 in the ROD.
- The Final IAP/EIS's Stipulation K-11 did not apply to the Preferred Alternative. The Final IAP/EIS's Stipulation K-12 has been re-

designated K-11 to avoid a gap in the series of stipulations and best management practices.

Visual Resource Management Classifications

The VRM classifications in the ROD are the same as those described for the Preferred Alternative in the Final IAP/EIS (see Table 2-2 in the Final IAP/EIS), with one exception. The Preferred Alternative in the Final IAP/EIS would have designated Wainwright Inlet as VRM II. However, BLM-managed lands in this area are surrounded by private lands and the

Management as VRM II could add an unnecessary layer of complexity to use authorizations in support of private land owners' use of their land and to the former DEW-Line Station's clean-up. Moreover, a principle purpose of this plan has been to facilitate permitting of onshore infrastructure in support of offshore oil and gas development. A classification of VRM III is more consistent with allowing pipeline and other infrastructure in this area and with permitting of former DEW-Line Station clean-up activities and activities supportive of actions desired by adjacent private land owners. A VRM III classification for the Wainwright Inlet is within the scope of the alternatives analyzed in the IAP/EIS; the inlet was analyzed under a VRM III classification in Alternative C.

Best Management Practice E-16

Reference to the publication containing current accepted standards for protecting raptors from powerlines has been changed to *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*, which was issued in December 2012. The Final IAP/EIS had referred to its 2006 predecessor guidance document.

Best Management Practice E-18

Text has been modified to clarify the intent of the measure regarding oil spill response training requirements.

Best Management Practice F-1

Text has been added to subparagraph (a) to clarify the minimum flight altitude near gyrfalcon nests. Text has been added to subparagraphs (h) and (i) to clarify that minimum altitude is to be maintained "when within" certain distances of walrus haulouts and seal aggregations.

Best Management Practice H-1

Subparagraphs (c)(6) and (c)(7) have been redesignated as subparagraphs (f) and (g), thus making them stand-alone requirements, rather than requirements of a plan.

Stipulation K-1

Subparagraph (k) in the Final IAP/EIS erroneously listed the Titaluk River setback from the centerline rather than from the ordinary high water mark. Subparagraph (s) in the Final IAP/EIS failed to make clear that under the Preferred Alternative the setback would be 1 mile for the entire length of the Nigisaktuvik River. The ROD's language corrects both these errors.

APPENDIX C: POTENTIAL MITIGATION MEASURES NOT ADOPTED

The decision in this ROD includes all practicable means to avoid or minimize environmental harm consistent with the purpose and need of the action, including potential impacts associated with cumulative impacts, except for the Potential Mitigation Measures⁵ listed below. These measures were analyzed in the IAP/EIS. Pursuant to 40 CFR 1505.2(c), the BLM provides the following explanations for not adopting six Potential Mitigation Measures.

- Potential Mitigation Measure 1 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This ROD will not require developers and operators of permanent infrastructure to develop a comprehensive plan to prevent outbreaks of infectious disease and the spread of sexually transmitted infections. Oil and gas exploration and development activity is one of multiple potential causes of infectious disease and sexually transmitted infections. The potential impacts of oil and gas development would be muted if the development is located at a distance from villages and is not connected to a village by a road. Because of multiple causation and the likelihood that oil and gas activities' contribution to these public health problems could vary among different proposals, it is inappropriate to adopt this mitigation measure absent a specific proposal. If the BLM receives an application for a major proposal near or connected by road to a village that could potentially have a significant impact on public health of the community, the BLM could at that time consider public health monitoring and mitigation similar to that proposed in this measure.
- Potential Mitigation Measure 2 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This ROD will not require developers and operators of permanent infrastructure to develop a comprehensive plan to prevent the abuse or trafficking of alcohol or drugs for reasons analogous to those described above for Potential Mitigation Measure 1 for Public Health—multiple potential causation for the abuse or trafficking of alcohol or drugs, different potential for oil and gas

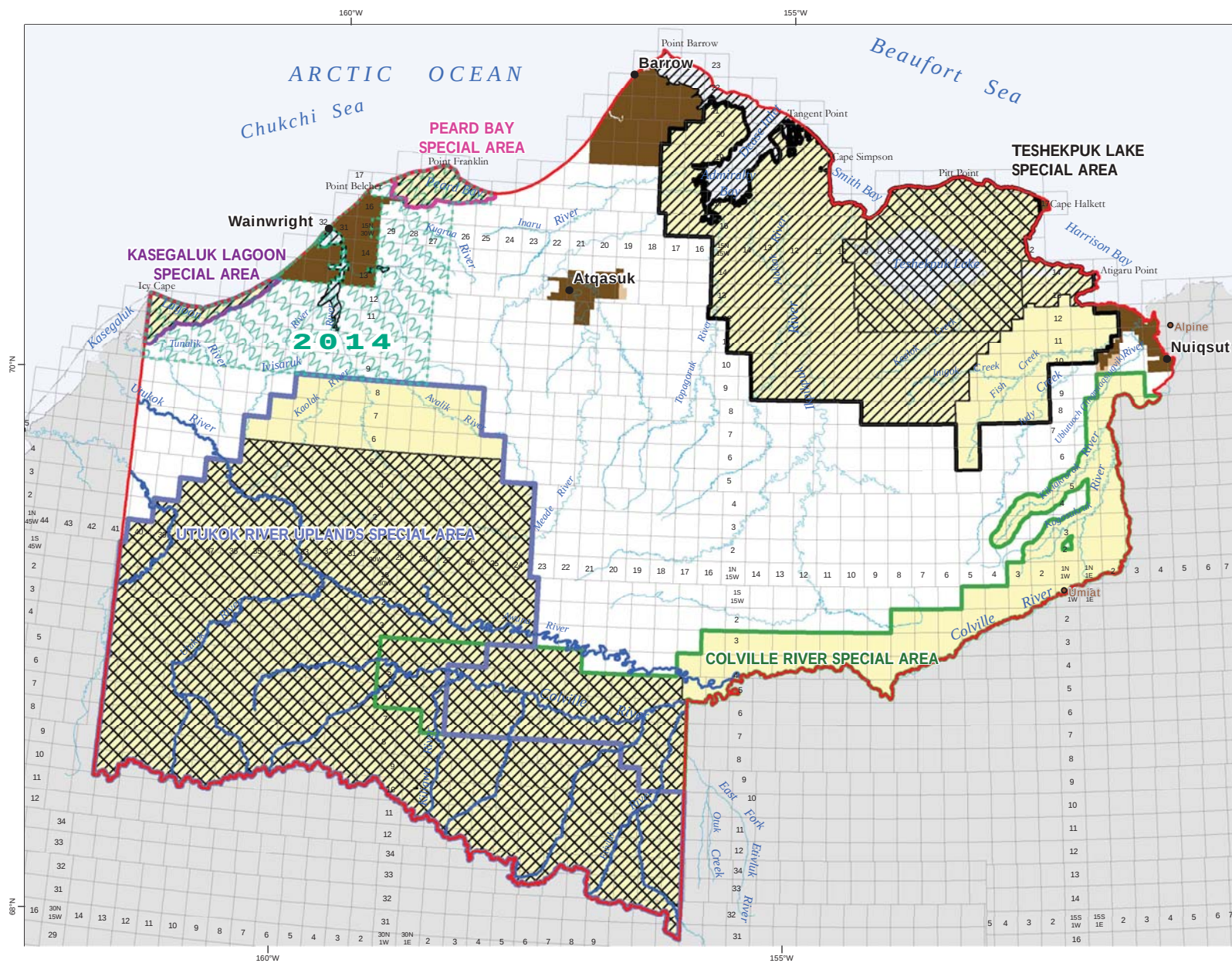
⁵ Potential mitigation measures discussed in this Appendix refer to measures discussed in Chapter 4 of the Final IAP/EIS that could potentially reduce impacts below those discussed for the relevant alternative. "Mitigation measure" is used in this context as described on page 61 of the BLM's NEPA Handbook.

facilities to have an impact depending on their distance from and connection to villages, and because site-specific measures can be considered for proposed developments that could have a significant impact on public health of a community.

- Potential Mitigation Measure 3 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This ROD will not require developers and operators of permanent infrastructure to develop a comprehensive plan to increase the recruitment and retention of North Slope resident workers. The BLM does not have authority or responsibility for the hiring practices of leaseholders or permittees.
- Potential Mitigation Measure 4 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This ROD will not require developers and operators of permanent infrastructure to develop a site-management plan for facilities near villages. In part, the ROD makes this decision because the potential public health impacts this measure was designed to ameliorate have complex multiple causations. Moreover, if a specific proposal could have significant impacts on a community's public health, the BLM could consider such a requirement at that time in coordination with the involved community. Many aspects of a site-management plan would likely address any connections with a nearby village. All villages are surrounded by lands owned by the villages' Native corporations, and village corporations would likely be involved in negotiating agreements with developers that propose roads or other infrastructure on their lands.
- Potential Mitigation Measure 5 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This potential mitigation measure would have the State of Alaska establish a public health monitoring program at a regional level to track health indicators that are vulnerable to impacts from oil and gas activities. The North Slope Borough and the Alaska Native Tribal Health Consortium would have roles in the identification of appropriate indicators, thresholds, and responsive actions. The measure does not require a role for BLM. The ROD, therefore, does not adopt this mitigation measure.
- Potential Mitigation Measure 6 for Public Health (see Sec. 4.3.21.5 of the Final IAP/EIS): This potential mitigation measure would address concerns regarding exposure to contaminants and the stress and dietary changes associated with the perception of contamination. It advises that lessees and permittees "should work in collaboration with the North Slope Borough and village subsistence oversight panels" to this end. The Department of the Interior and BLM support

communication between lessees and permittees on the one hand and the Borough and other local governments and organizations on the other to ensure environmental media are safe and that the local populations can continue to trust in their safety. These communications with regulatory agencies may be facilitated by the NPR-A Working Group established in Chapter 1 of this ROD. The measure, however, does not propose a role for BLM in this collaboration, so this ROD does not adopt this mitigation measure. Note, best management practice A-10 in subparagraph (h) adopts a suggestion of the potential mitigation measure to have reports on air quality baseline monitoring, emissions inventory, and modeling results developed in conformance with best management practice A-10 provided by the project proponent to the North Slope Borough and to local communities and Tribes in a timely manner.

APPENDIX D: MAPS



MAP 1 Land Allocations

Oil & Gas Leasing and Infrastructure

- Unavailable for leasing or exploratory drilling
- Unavailable for leasing and no new non-subsistence infrastructure or exploratory drilling; all other BLM-managed lands would be available for applications for permanent infrastructure in support of offshore oil and gas development.
- Leasing deferred to 2014

Special Areas

- Colville River
- Teshekpuk Lake
- Utukok River Uplands
- Peard Bay
- Kasegaluk Lagoon

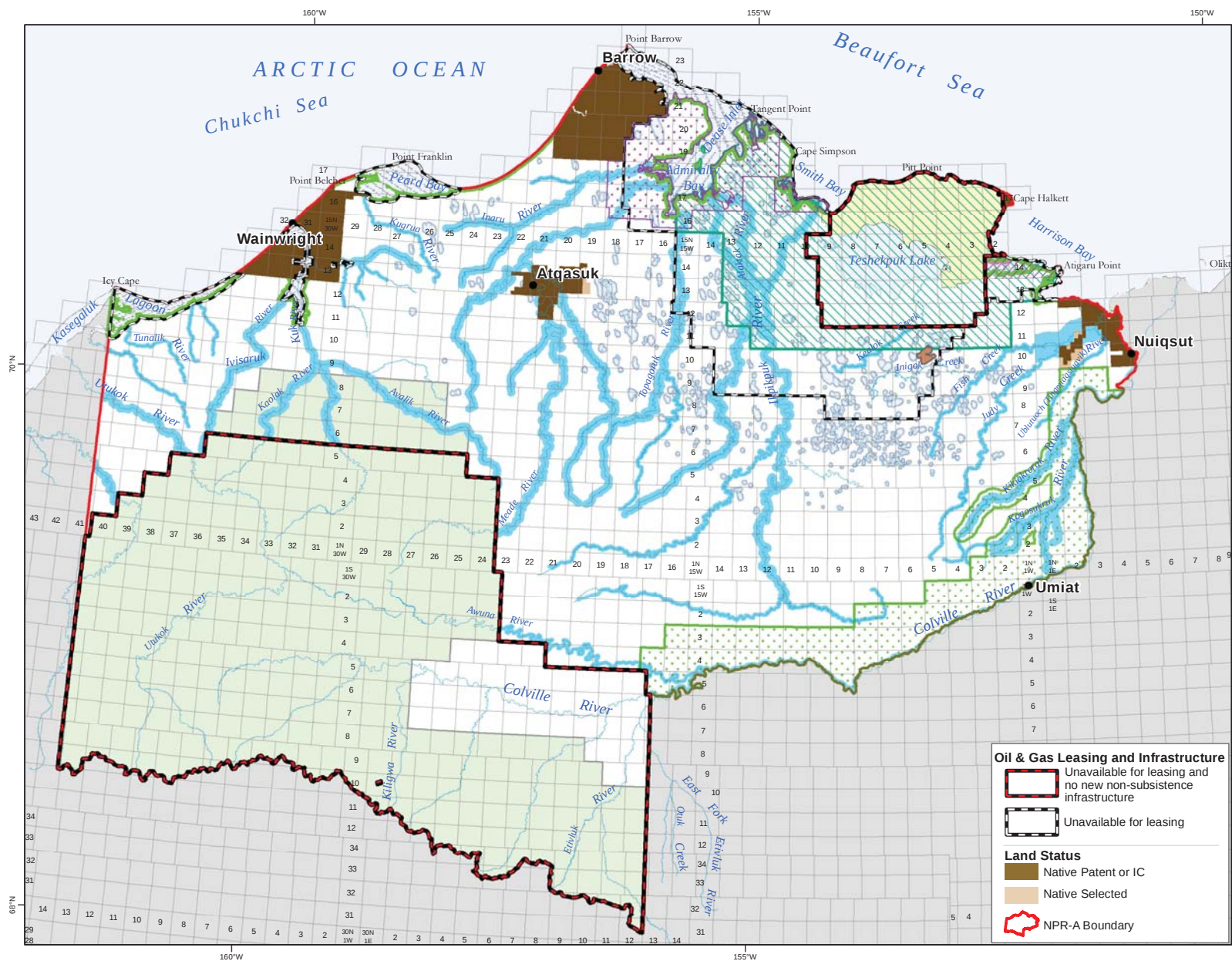
Free flow, water quality, and outstandingly remarkable river values maintained

Land Status

- Native Patent or IC
- Native Selected
- NPR-A Boundary

0 6 12 24 36 48 Miles

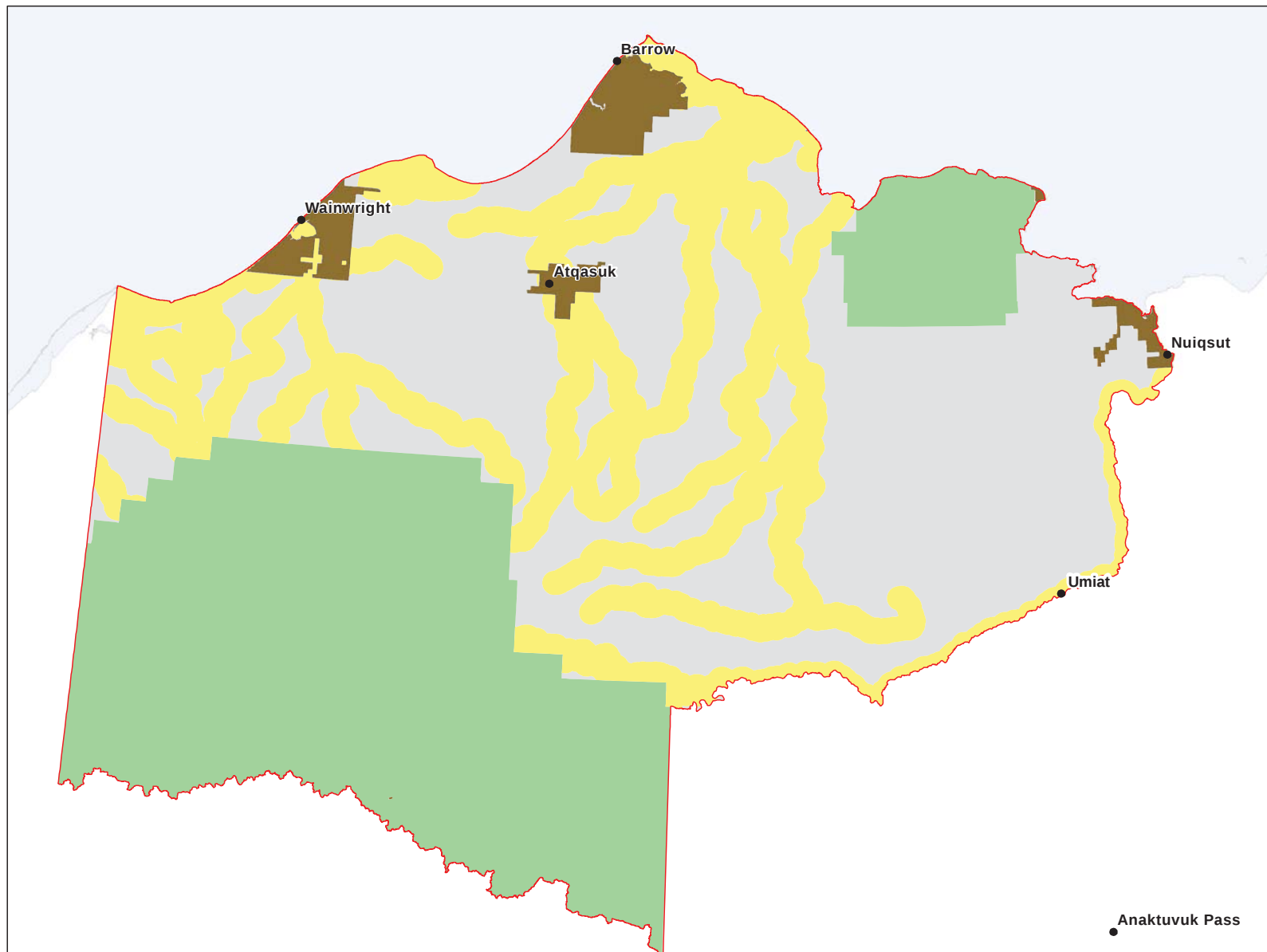
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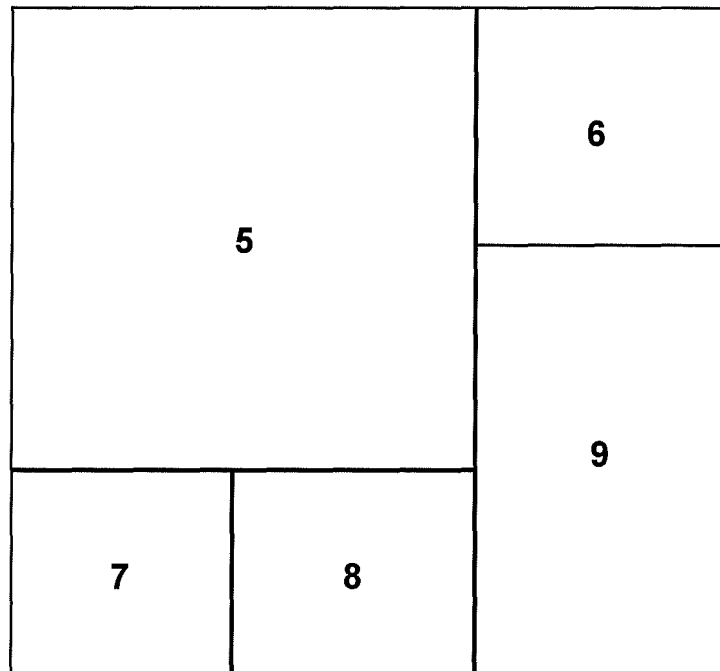


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Back Cover Photos:

5. Coastal erosion due to warming permafrost shoreline, National Petroleum Reserve-Alaska.
Photo by University of Texas.

6. Arctic Fox, National Petroleum Reserve-Alaska.

7. Transporting exploration drill rig equipment, National Petroleum Reserve-Alaska.
Photo by NSSI.

8. Bear flowers on a thermokarst slump along the Colville River, National Petroleum Reserve-Alaska.
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9. Subsistence ice fishing, Nuiqsut, Alaska. Photo by NSSI.

