



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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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>B-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~~USDOJ 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 (USDOJ 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 A~~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.