



United States Department of the Interior

NATIONAL PARK SERVICE
Dinosaur National Monument
4545 Highway 40
Dinosaur, CO 81610



In reply refer to:
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May 1, 2017

Memorandum

To: Ester McCullough, Field Office Manager, BLM Green River District
Office/Vernal Field Office

From: Mark A. Foust, Superintendent, Dinosaur National Monument

Subject: Scoping Comments on the Proposed December 2017 Competitive
Oil and Gas Lease Sale Parcels (3100/UT922)

As per the 2014 Memorandum of Understanding (MOU) between the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), National Park Service (NPS), and the State of Utah, we appreciate the BLM providing the NPS the opportunity to review the GIS shapefiles for the upcoming December 2017 proposed competitive oil and gas lease sales. The closest proposed lease parcels are located immediately adjacent to the western boundary of Dinosaur National Monument (hereinafter referred to as DNM) which straddles the border of northeast Utah and northwest Colorado. Numerous additional parcels are located within several miles of the western boundary and near the Headquarters building in Dinosaur Colorado as well. We appreciate the opportunity to provide you with our scoping comments regarding potential effects on the monument's air quality and air quality-related values, viewsheds, dark night skies, and water quality impacts on threatened and endangered fish. We believe collaboration between our agencies is essential in protecting the resources and values that are fundamental to the establishment of DNM as a National Park Service Unit.

In 1915, President Woodrow Wilson established the original 80-acre monument as a unit of the National Park System to protect the 'extraordinary deposit' of dinosaur fossils. In 1938, President Franklin Roosevelt expanded the boundaries by over 200,000 acres to protect the surrounding canyons of the Green and Yampa Rivers. Known as one of the 'hidden jewels' of the NPS, the geologic and paleontological resources in DNM showcase millions of years of natural processes and associated plant and animal life. In addition, DNM contains exceptional biological diversity and species abundance with over 1,000 native plants and animal species found within six major vegetation communities. DNM also contains 46 miles of the lower Yampa River, the last remaining free-flowing large river in the Colorado River System. The monument provides a unique opportunity to study river science as our 'laboratory'

contains the unregulated Yampa, the regulated Green below the Flaming Gorge Dam, and a 'hybrid' river below the confluence of both rivers. Furthermore, DNM contains evidence of at least 10,000 years of human history including the Fremont Culture, Spanish Exploration, European and early American settlement, homesteading, and ranching. DNM also provides a wealth of enjoyment and educational opportunities for the approximately 300,000 visitors annually which contributed over \$17 million in local economic benefits in 2015.

DNM is concerned about potential impacts to the monument's resources and visitor experiences that could result from exploration and development operations subsequent to leasing of the parcels, particularly parcels located near the western boundary and Green River District Entrance Road in Jensen Utah and southeastern boundary and Canyon Visitor Center in Dinosaur Colorado. DNM specifically requests the evaluation of the following resources in the environmental assessment (EA) for these adjacent parcels:

Air Quality and Air Quality Related Values

One purpose of the Clean Air Act (CAA) is "to preserve, protect, and enhance the air quality in national parks" (42 U.S.C. §7470(2)). DNM, as a Class II area, recommends that the protection of air resources and values is consistent with direction found in the Department of Interior's Onshore Oil and Gas Leasing Reform Policy (IM 2010-117), as well as the 2011 Air Quality MOU. It is with these management mandates and objectives in mind that the NPS has been participating in the Air Quality Technical Work Group (ATWG).

Pristine air quality and nearly limitless views are an integral part of the visitor experience at DNM and are a necessary part of maintaining our viewsheds and dark night skies. In recent years, wintertime ozone levels in the Uintah Basin have exceeded the National Ambient Air Quality Standards (NAAQS) and the area is likely to be designated as non-attainment in the future. Air quality studies have demonstrated that oil and gas activity in the Uintah Basin is a primary contributor to these wintertime ozone exceedances.

Extensive oil and gas development can emit significant quantities of air pollutants from construction, well drilling and production operations, as is the case in the Uintah Basin. Although emissions from an individual well or well pad may be inconsequential, cumulative emissions from regional oil and gas operations can cause significant air quality and Air Quality Related Values (AQRV) concerns. Pollutants of concern (both primary and secondary) from oil and gas operations include nitrogen oxides (NO_x), particulate matter (PM_{2.5} and PM₁₀), sulfur dioxide (SO₂), volatile organic compounds, ozone (O₃), greenhouse gases and hazardous air pollutants. These pollutants can contribute to visibility degradation in national parks, adverse effects to human health which is a concern for park visitors and staff, and adverse ecosystem effects in parks from excess nitrogen and sulfur deposition and ozone impacts to vegetation. Ozone and visibility are of significant concern for DNM.

Viewsheds

Visual impacts from the proposed oil and gas leases are also a concern for DNM. Scenic vistas from high elevation points within the monument provide dramatic views and a remote and far-reaching landscape that includes montane peaks, high desert plateaus, entrenched canyons carved by the Yampa and Green Rivers, and expansive skies. These vistas are fundamental to the visitor experience at the monument.

The NPS recommends mitigations to reduce viewshed impacts, including painting infrastructure to match the surrounding environment and using the topography and landscape to create a visual buffer. In addition, nighttime activity and lighting should be reduced to the minimal amount possible.

A detailed visual impact assessment should be included in the environmental analysis including potential changes in the visual landscape from important park viewpoints including Green River District Entrance Road, Quarry Exhibit Hall, Plug Hat and Escalante Overlooks. Because the proposed lease parcels would be located immediately adjacent to the monument, surface disturbing activities within the foreground/middleground distance zone as defined by BLM Visual Resource Management system (up to 5 miles) would be significant. For lease parcels located within the viewshed of the monument, we recommend other visual mitigation measures such as use of BLM standard environmental colors and interim reclamation be applied. All development should be required to adhere to the design and mitigation standards as defined in Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development – the “Gold Book” developed by the BLM and USFS.

Fugitive dust during construction and operations is also a concern for both air quality and visual resources. Given dry, windy conditions, windblown fugitive dust could reach a 50-mile radius of the lease sites, which would include DNM. We recommend monitoring and adaptive management of fugitive dust minimization measures to ensure minimal impacts on local and regional air quality and visual resources.

Dark Night Skies

Lighting associated with the implementation of oil and gas leases has the potential to adversely impact the naturally dark skies of DNM. Artificial sky glow is the brightening of the night sky from human caused light scattered in the atmosphere. Artificial sky glow can greatly detract from the overall darkness of the night sky which can inhibit people’s ability to view celestial objects in the night sky. Artificial sky glow can also impact wildlife habitat, wildlife behavior, and scientific discovery.

The NPS Night Skies Program collected baseline data from DNM in 2009. At that time, the data indicated a calculated Sky Quality Index (SQI) of 96. The SQI is a synthetic index derived from the distribution of sky luminance values (to zenith angle 70°) in the artificial sky mosaic which ranges from 0-100 with 100 being a sky free of artificial sky glow. With a value of 96, DNM is considered to have a sky that retains all of its natural characteristics. DNM regularly hosts night sky programs for visitors and is currently working towards an International Dark Sky Designation.

DNM recommends the following best management practices (BMPs) to reduce impacts to dark night skies:

- Light only where needed
- Light only when needed (consider using sensors or timers)
- Shield lights and direct them downwards (full cutoff preferred)
- Select lamps with warmer colors (less blue light)
- Use the minimum amount of light necessary
- Select the most energy efficient lamps and fixtures
- Avoid unnecessary flaring of gas at night

- When flaring of gas is required, use a visual screen or enclosed combustion chamber ('combustor') to prevent adverse visual effects on night sky viewing areas at DNM

Additional useful recommendations can be found in the report *Oilfield Lighting Can Co-Exist with Dark Skies* at http://mcdonaldobservatory.org/sites/default/files/pdfs/oilfield_lighting_can_coexist.pdf and an informative online webinar by the Society of Petroleum Engineers: <https://webevents.spe.org/products/lighting-practices-in-the-oil-and-gas-industry-and-the-consequences-for-safety-cost-and-the-nighttime-sky>.

Natural Soundscapes

Anthropogenic noise from construction equipment, machinery and traffic can affect human environments, visitor experience and wildlife species. There are ample studies that show increases in noise can negatively affect mating, nesting, predation and other behaviors in a variety of wildlife species. Other studies show noise levels can affect the experience of park visitors and lead to a variety of social, psychological, and physiological changes. Recent acoustical data from the Josie Bassett Morris cabin, a popular destination for visitors at DNM, indicates a residual sound level (L90) of 36 dBA. The median natural ambient sound level (Lnat) was 39 dBA and the median existing sound level (L50) was 43 dBA. The proposed oil and gas leases could create significant noise from construction, operations, and traffic. Low frequency sounds (those typical of a trucks, equipment and machinery) can propagate for large distances with very little atmospheric attenuation and could therefore be audible in otherwise quiet park environments.

Because U.S. 40 is lightly traveled, with a 2015 Annual Average Daily Traffic (AADT) volume of only 1100 vehicles, there may be many times when traffic noise is not audible at Canyon Visitor's Center in Dinosaur Colorado. The monument entrance road in Jensen Utah (State Highway 149) runs through a rural residential area into the monument. The AADT for State Highway 149 has a AADT of 870 vehicles for the same year. The development of the proposed oil and gas leases could create significant noise from construction and operational traffic that passes by the Canyon Visitor's Center or through the residential area of Jensen and the Quarry Visitor's Center. Low frequency sounds (those typical of trucks, equipment and machinery) can propagate for large distances with very little atmospheric attenuation and could therefore be audible in otherwise quiet park environments.

Efforts to reduce noise from operation of the facility and ancillary equipment (e.g. power tools, construction equipment, and other associated machinery) should be implemented and noise reducing treatments (barriers, curtains, enclosures, silencers, mufflers, etc.) should be used where appropriate. All transportation vehicles should have appropriate mufflers, in good working condition, that meet or exceed the requirements of 40 CFR 205.

Endangered, Threatened, and Sensitive Species

Several parcels appear to be located on or adjacent to Brush Creek, approximately one mile upstream of its confluence with the Green River. Any surface disturbance in these parcels could potentially have effects on water quality in the Green River. Such effects could potentially have adverse impact on endangered fish (Colorado pikeminnow, razorback sucker, humpback chub and bonytail). DNM specifically requests the evaluation of these endangered fish in the environmental assessment for all parcels located in or near Brush Creek.

Due to the potential significant impacts to the resources and visitor experience at DNM, we respectfully request a deferral on parcels in areas that are immediately adjacent to the monument boundary and the parcels visible from the Quarry Visitor Center and Exhibit Hall (parcels 8511 and 8510, see attached map). In the event that deferral is not possible, we request stipulations of no surface occupancy be placed on the parcels and the best practice of using terrain to screen development, thereby protecting the viewshed from the monument. If you have any questions or need additional information, please contact Lisa Baldwin, Chief, Resource Stewardship and Science, at (970)374-3064 or at lisa_baldwin@nps.gov.



Mark A. Foust

cc: Jim Ireland, NPS Utah State Coord. /Superintendent, Timpanogos Cave National Monument
Sheri Wysong, BLM Utah State Office

