RE: Marsh Creek East 3-D Seismic Survey Environmental Assessment(EA)

 DOI-BLM-AK-R000-2021-001EA

I am submitting the following comments on the proposal and Environmental Assessment. I am limiting my comments to the most egregious of areas where this analysis falls short of being thorough and accurate, as the timeframe for the review of this EA has been compressed to a short period that does not lend itself to a full analysis. It does not provide adequate time to comment on a project of this magnitude that has the potential to significantly and permanently effect the Arctic National Wildlife Refuge. I also want to object to this important public review process being scheduled during the two week Christmas/Holiday period.

1. **FONSI.** The Draft Finding of No New Significant Impact (FONSI) lists several elements that have or have the potential to have “significant impact.” This analysis makes a weak attempt to marginalize or ignore those impacts. The agency should instead be required to conduct a full Environmental Impact Statement (EIS) with detailed analysis and public hearings, prior to proceeding with the decision process on this permit application. The following statements provided in the EA tend to contradict the conclusion of a FONSI:

* “**Ethnographic Resources**: The Gwich'in hold the Coastal Plain as sacred ground to their culture and as Iizhik Gwats'an Gwandaii Goodlit (The Sacred Place Where Life Begins), and the presence of development or other oil and gas activities in the Project Area would constitute a cultural impact on the Gwich'in. This is because they believe that development in the Coastal Plain would harm caribou and other migratory resources (such as waterfowl) that migrate to the Coastal Plain to give birth. This sacred pattern of migration and birth maintains the value of, and gives essence to, the Coastal Plain as the place where life begins. This sacred belief is based on the intergenerational traditional knowledge of the Gwich'in that is built on millennia of residence in the region. Any potential impacts on the resource would constitute a cultural effect.”
* “**Polar Bear**: Temporary loss or alteration of polar bear denning habitat would result primarily from the tight 330- to 1,320-foot grid spacing used in seismic exploration. The direct effects of seismic vehicle passage and of building ice roads in potential denning habitat would be temporary until the vehicle trails and ice structures thawed during spring melt. Noise and visual disturbance from human activity and operation of equipment, especially aircraft and vehicle traffic, have the potential to disturb polar bears nearby. The greatest concern is disturbance of maternal females during the winter denning period, which could result in premature den abandonment and loss of cubs. In undeveloped areas subject to seismic exploration, dens are likely to have been established and occupied by the time enough snow has accumulated to allow those activities to proceed, raising the risk of den disturbance and abandonment.”
* “**Ringed Seal**: Ringed seals could overwinter and produce pups in the nearshore project area. The integrity of ringed seal lairs would be threatened by collapse caused by tracked vehicles on sea ice during seismic activity or by the construction of winter roads on the ice. In addition to physically altering potential habitats, tracked vehicles and ice roads in the nearshore environment could disturb and displace individual seals and could injure or kill pups and females.”
* “**Vegetation**: Direct surface impacts would occur in a grid pattern from heavy, tracked, seismic vibrator vehicles and camp trains on skis pulled by a tracked trailer directly over the snow-covered tundra. Impacts are visible in a systematic grid pattern on the tundra surface and impacts on vegetation and wetlands include changes in plant community composition and structure, altered hydrology, compacted soil, and by direct damage to aboveground structures, such as tussocks or woody stems and branches. Long-term studies have shown that the overall long-term impact of seismic vehicle traffic on tundra is low, but in some cases, impacts can still be measured up to 33 years after exploration.”
* “**Soils and Permafrost:** Ice road and pad construction and seismic survey impacts on soil and permafrost resources vary, depending on the type of vegetation, disturbance type, and depth of the active layer; however, the depth of thaw increases each year following ice road construction. Seismic surveys and ice road and pad construction supporting exploration for petroleum resources would be performed during the winter to reduce impacts; however, impacts on vegetation and disturbance of the active layer would result in direct impacts on the soil quality and permafrost where seismic survey activities occur by changing drainage patterns of surface water, ponds and creating channels that concentrate water and accelerate permafrost thaw. Where drainage patterns are altered, blockages can lead to ponding and sediment deposition. Where drainage patterns redirect surface flow or increase velocities, such as at embankments, erosion of sediments occurs.”

2. **Summary of Environmental Assessment**. In this section the agency summarily dismisses any potential impacts and significant impacts by repeatedly stating “No new significant impact to environmental (fill in the blank) are anticipated, without a thorough review of those impacts. The dismissal of potential impacts on Subsistence, is particularly egregious. The subsistence dependence on wild resources is cultural, social and economic. To dismiss limitations only in terms of “harvester access” is falling woefully short of the required analysis required by ANILCA.

3. **Project Area and Access Road** - Figure 1. The analysis references the project and camps will be accessed from outside of the project area, via an access road from Deadhorse. “Equipment would be mobilized from existing facilities in Deadhorse. The camp trailers and seismic equipment would be transported via a preferred overland access route from Deadhorse to Kaktovik or along a secondary sea ice route.3. The length of each snow access trail would be approximately 136.5 miles for the tundra access route and 66.4 miles for the sea ice access route.” The analysis of this access road, to be constructed through the Arctic National Wildlife Refuge, across the Coastal Plain, receives reference but no analysis in the scope of the analysis in this EA, and has the potential to have significant impacts, with its location and the type, frequency and amount of use and weight of vehicles that will be utilizing it to supply the operation in the project area. It also does not mention whether the road will be left in tact for future access through the National Wildlife Refuge, and what the future limitations and permitted uses will be authorized, after this project is complete. Is there a separate project proposal, EA and analysis for this access road that will support the project from Deadhorse?

4. **Water Use**.

1. It appears the project description has been altered, from an earlier version posted on the BLM portal, which described utilizing fresh water from nearby lakes and rivers. This proposal in this document states the following:
* “KIC does not anticipate needing to withdraw large quantities of water from lakes for camp use. It is estimated that 2,000-3,000 gallons of water would be necessary for camp operations per day. If any water would need to be withdrawn from lakes, KIC would be required to obtain approval from the BLM and, potentially, authorization from the ADNR. If water withdrawal from lakes is necessary ROP 9 from the Coastal Plain Leasing ROD (USDOI BLM 2020) would apply. ROP 9 lists specific requirements related to fish presence and lake bathometry data necessary to determine volumes of liquid water available for use. In addition, a Temporary Water Use Authorization (TWUA) (11 AAC 93.035 (a) (b) and 11 AAC 93.220) would be required from ADNR for water use beyond 5,000 gallons per day and for any water body in which the FWS has applied for a reservation of water.”
* “Any water withdrawn would be processed through an Alaska Department of Environmental Conservation (ADEC) approved water system, which consists of filtration and chlorination.”

B. Has anyone looked at the math provided in the proposal? The project describes:

* 8-10 Stringers with 5 trailers each which equals 40-50 trailers
* 180 people in camp
* 2,000-3,000 gallons of water per day would equate to between 11.11-16.66 gallons/person/day.
* The proposal states the camps will have kitchen, diner and washrooms. If an average shower requires 17 gallons/8 minutes, a high efficiency home dishwasher (not an industrial one) requires 3 gallons/cycle, that would exceed the budgeted water without including water necessary for grooming, sanitation, prepping and cooking meals, cleaning, drinking and other needs.
* It appears this EA is written to exclude the analysis of the potential effects of extracting freshwater lakes and rivers. The exclusion of this analysis from this EA, and limiting public review, leads one to believe it was intentionally omitted or perhaps not enough scrutiny was applied to the analysis. Was this an attempt to delay review of this option until the EA was approved and then the review of extracting water from lakes and streams would only be reviewed as part of the state permit application?

C. The location of camps in proximity to waterbodies.

* Perhaps the most obvious terrestrial landscape and ecosystem element of arctic coastal lowlands is the abundance of lakes and wetlands. For example on the Arctic Coastal Plain of northern Alaska (ACP), lakes cover greater than 20% of the land surface and wetlands cover up to another 50%–60%, which are mainly in the form of drained lakes basins (Hinkel *et al* 2005, Grosse *et al* 2013).
* The proposal states “Camps will be located at a minimum of 100’ from waterbodies.” Please explain how that is possible?

D. Snow Melt for Water Source

* The proposal states “water would be produced at camp with a skid-mounted snow-melter. Water would be produced by melting snow, transporting water to camp from Kaktovik and/or Deadhorse or, if it is a low snow year, from withdrawing water from lakes. Snow would only be removed from grounded areas of lakes.”
* Depending upon the water content of the snow, that would equate to about 10/1 ration, based on a “average” snow moisture level. The snow in this area has a below average water content.
* Even if the moisture content in the snow was average, and if the numbers provided in the proposal are correct, that would equate to approximated equivalent of 20,000-30,000 gallons of snow/day to meet the needs of the camp.
* If water were to be hauled from Deadhorse or Kaktovik across the tundra, there is no analysis provided as to how the added weight of the water trucks and added vehicle traffic would impact the soils, vegetation, wildlife and scarring of the tundra, within the project area nor on the access road to Deadhorse or possibly another access road to Kaktovik.
* What happens if the snow is not available to meet the needs of the flora and fauna the following season? I see no discussion nor analysis of this in the EA.

E. Water and Water Rights on the Arctic National Wildlife Refuge

* The following information was taken from the USFWS Arctic National Wildlife Refuge Website. Although it is readily accessible to the public and agencies, I see no reference of it, nor any similar information on these concerns in this EA. This information, and similar information pertaining to the freshwater availability and usage, should be part of a basic analysis and should certainly be incorporated in the EIS to consider the “significant” impacts. Water and Water Rights - from USFWS Arctic NWR website:

“It stings as wind-driven snow, soaks as gentle rain and penetrates as thick fog. It piles up in fields of ice, fed by springs and river overflows during winter. In spring, its sparkling drops gather to flood the river corridors, washing gravel bars and nourishing plants. During summer, it courses through rivers and streams, the veins and arteries of the Refuge. Finally it reaches the coast, enriching the ocean with its load of minerals. All along the way, it provides life-sustaining habitats for invertebrates and fish; feeding, nesting and brood-rearing areas for birds; and refreshment for mammals, including people.

Water is the lifeblood of the Arctic National Wildlife Refuge. Ensuring water quality and quantity for fish and wildlife resources is one of the purposes of the Refuge. But water quantity is limited, especially on the coastal plain - technically a very dry area. Less than five inches of precipitation falls there each year. In addition, compared to areas west, where surface water is plentiful, the coastal plain has few lakes, and they are shallow and unevenly distributed.

Most of the water available in summer comes from spring snowmelt. It pools on the surface of the land, soaking the tundra. The water doesn’t percolate through the soil, as it does in most places, due to permafrost, which underlies most of the area about a foot down.

The Fish and Wildlife Service (Service) has federal rights to water on the Arctic Refuge. These federal reserved water rights were granted for Refuge purposes by laws which established the area.

Although the Service has federal water rights, agency policy is to apply for state water rights through state procedures whenever possible. Between 1994 and 1998, the Service filed water rights applications with the State of Alaska for 140 lakes and 12 river segments on the Refuge coastal plain. Action on those applications is still pending. The quantity of water associated with those rights has not been determined. In accordance with the Alaska National Interest Lands Conservation Act (ANILCA) the quantity will be an amount that will sustain the health of fish and wildlife and their habitats within the Refuge.

This process does not negate the Service's federal water rights. In fact, it helps the State and others know just how much water is needed to conserve Refuge fish and wildlife resources. This is important given the interest in other water-consuming activities on the coastal plain (ice roads, oil drilling, municipal needs).

While it awaits action on the applications and related needs, the Service continues to ensure that adequate water will be available long-term to sustain the wonderfully diverse fish and wildlife resources of the Arctic Refuge.”

5. **Grey Water.** The analysis of this element is absent from the EA, other to state that it would meet the discharge requirements of the Alaska Department of Environmental Conservation permit prior to discharge. What is omitted from this EA is how the discharge of the grey water, and its chemical composition could potentially impact the surrounding vegetation, needs of birds and mammals during the spring and summer breeding and nesting season and the invertebrates that are critical to the life cycles of the other species.

* As stated above in comment number 4 “Water Use,” freshwater will be used in the camps and the grey water will be discharged on site. The estimated discharge, up to 5,000 gallons/day, exceeds the amount stated as estimated amount to be used. The EA does not explain this discrepancy.
* The proposal is for the grey water to be dispersed on site. Does the discharge permit required by the State, regulate the amount of nutrients in the discharge? Greywater tends to exhibit high PH due to the presence of alkaline materials in soaps and detergents and contain surfactants. Has any analysis been conducted to see how the process of dumping this on the tundra and wetlands, will have short or long term effects?
* Once again lets look at the math:
	+ Water Usage is estimated at 2,000-3,000 gallons/day. Grey water discharge is estimate at up to 5,000 gallons/day. These numbers differ, why?
	+ It is projected that the camp would be expected to move 1 to 2 miles every 5 to 7 days, approximately 4-6 times per month.
	+ If up to 5,000 gallons of grey water is discharged per day, that would add up to 150,000 gallons of water containing nutrients and surfactants being distributed on the wetlands and tundra habitat in a 30 day period. I was unable to find out how many total days the camps would be located in the project area, so the total projected amount of grey water dispersal on the surface is hard to calculate. I see no analysis of how this may contribute to short term or long term impacts.

6. **Soils, Permafrost and Air Quality**. There is very little mention nor analysis of the short and long term effects of the disturbance of permafrost which could result from the proposed action. The EA mentions how precautions will be taken, but does not provide adequate analysis of how the recently warming temperature, and the accelerated warming and thawing of permafrost in these areas will contribute to the potential effects of this proposal. Permafrost is thought to contain about twice as much carbon as is currently in our atmosphere. Release of this carbon and methane is predicted to effect the air quality. I do not believe this EA adequately describes nor provide analysis of the short and long term effects on the permafrost nor the potential effects on air quality. Max Homes, Deputy Director and Senior Scientist of the Woods Hole Research Center was quoted in the New York Times on August 23, 2017, stated this about the Arctic region in Alaska; “This area could lose much of its permafrost by midcentury, which has all kinds of consequences both locally for this region, for the animals and the people who live here, as well as globally. It’s sobering to think of this magnificent landscape and how fundamentally it can change over a relatively short time period.”

**Conclusion**:

I would like to conclude by echoing Max Homes words, “It’s sobering to think of this magnificent landscape and how fundamentally it can change over a relatively short time period. I urge you to not dismiss, marginalize nor discount the significant effects that could result from this proposed project.

Although the conclusions of the rushed and incomplete analysis in this EA lead the BLM to conclude there is no significant impact, I urge you to find this does not meet the criteria of a FONSI, and further analysis in the form of an Environmental Impact Statement is required. I realize the current Administration is rushing to get this approved prior to Inauguration of our new President in January 2021, but in this case the biological consequences are just too high to be dismissed in order to score a political “win.”

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