



United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT

Alaska OCS Region

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FINDING OF NO SIGNIFICANT IMPACT SAE Open-water OBN Seismic Survey Geological & Geophysical Permit Application #14-02 Beaufort Sea, Alaska

Introduction

In accordance with the National Environmental Policy Act (NEPA), 42 USC 4261, *et seq.*, the Council on Environmental Quality regulations at 40 CFR 1501, *et seq.*, Department of the Interior (DOI) regulations implementing NEPA at 43 CFR 46, and Bureau of Ocean Energy Management (BOEM) policy, BOEM prepared an environmental assessment (EA) of the potential effects of a three-dimensional (3D) ocean-bottom node (OBN) seismic survey proposed by SAExploration, Inc. (SAE) in the Beaufort Sea Planning Area of the Alaska outer continental shelf (OCS), to be conducted in 2014.

The proposed seismic survey (Proposed Action) is detailed in a document submitted by SAE on December 30, 2013, titled "Colville River 3D-Seismic Survey Plan of Operations 2014" (Plan of Operations). The Plan of Operations was submitted by SAE in support of its application for a Permit to Conduct Geological or Geophysical Exploration. The Proposed Action, which is summarized in Chapter 2 of the EA, is authorized under the OCS Lands Act (OCSLA), 43 USC 1331, *et seq.*, and the regulations for Geological and Geophysical Explorations of the OCS at 30 CFR 551.

The notice of preparation of an EA on the Proposed Action was published on April 16, 2014, on Regulations.gov (Docket No. BOEM-2014-0040), sent to potentially affected stakeholders, and posted on the Alaska OCS Region website. The notice stated that "BOEM is inviting the public to comment on issues that should be considered by BOEM in preparing the EA." Comments were accepted through May 8, 2014. No comments were received.

BOEM prepared the EA to determine whether the Proposed Action may result in significant effects (40 CFR 1508.27) triggering the need to prepare an environmental impact statement. The EA analyzes the potential for significant adverse effects from the Proposed Action on the human environment, which is interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment (40 CFR 1508.13 and 1508.14). The EA was also prepared to assist with BOEM planning and decision-making (40 CFR 1501.3b), namely, to help inform a determination as to whether the Proposed Action would be conducted "in a safe and environmentally sound manner so as to prevent harm or damage to, or waste of, any natural resources... any life (including fish and other aquatic life), property, or the marine, coastal, or human environment" under 30 CFR 551.2.

Purpose of the Proposed Action

The purpose of the Proposed Action is to gather geophysical data that will be used to replace and/or augment existing data sets with better quality, higher resolution seismic data, and to provide new data to improve understanding of the geology and potential targets for oil and gas exploration. This information will provide insight into the geologic evolution, basin architecture, and depositional and structural history of the petroleum system, and will help inform future decisions about potential exploration and development of the Beaufort Sea OCS

Description of the Proposed Action

SAE plans to conduct a three-dimensional (3D) ocean-bottom node (OBN) seismic survey over an approximately 727 square mile area, consisting of State waters and Federal waters of the U.S Beaufort Sea and adjacent onshore lands.

Seismic operations will be conducted using ocean-bottom recording nodes, a modification of the ocean bottom cable method that uses battery-powered cableless receivers. The 65 pound (29.5 kg) nodes would be placed on the ocean bottom, and tethered together for ease of retrieval. Marine seismic operations will be based on a “recording patch.” Recording patches are groups of six receiver lines and 32 source lines. Each receiver line is approximately 8 km (5 miles) in length and spaced approximately 402 m (1,320ft) apart. Source lines are 12 km (7.5 miles) long and spaced 502 m (1,650 ft) apart. The terrestrial component of this Proposed Action will have staging on privately owned property and existing private facilities in the Prudhoe Bay area.

The survey activities would occur over approximately 70 days between July 1 and October 31, 2014. Actual data acquisition is planned to occur between August 15 to October 15, 2014, with effective shooting of seismic anticipated to occur over approximately 70% of the 70 days (49 full days of shooting).

Environmental Assessment

BOEM evaluated the Proposed Action and a No Action alternative. Other alternatives were not suggested through internal or external scoping (public comment period).

Alternative 1. No Action.

Under this alternative, BOEM would not issue SAE a permit for the Proposed Action, and the Proposed Action would not occur. Not issuing the permit for the survey could result in delay in understanding of the geophysical makeup of the U.S. Beaufort Sea, and a loss or delay of opportunities for discovery and extraction of natural resources, including any associated economic benefits. It might also delay the acquisition of information on the extent of OCS oil and gas resources, and the ability to evaluate the evolution of the petroleum system at the basin level, including identifying source rocks, migration pathways, and play types.

Alternative 2. Proposed Action.

Under this alternative, BOEM would issue SAE a permit for the Proposed Action, and the Proposed Action would occur. Geophysical data would be obtained to identify and map potential hydrocarbon-bearing formations and the geologic structures that surround them, which would help inform future decisions about potential exploration and development of the Beaufort Sea OCS. Adverse effects to the environment would occur; the level of these impacts would range from negligible to minor (as defined in Appendix A of the EA) depending on the specific environmental resource. Anticipated impacts of the Proposed Action on these resources are summarized below:

- **Physical Resources**

The level of effects of the Proposed Action on air quality would be negligible because no pollutants would exceed recognized thresholds defining a *de minimis* or negligible effect. Effects to water quality were considered with respect to insertion and retrieval of nodes, vessel discharges, non-point

source runoff, and small fuel spills—all of these impact producing factors would be small, temporary, and localized, and result in a negligible level of effect on water quality.

- **Biological Resources**

The Proposed Action is expected to have negligible to moderate, short-term effects on biological resources. Vessel operations, primarily placement and retrieval of nodes, would have only a localized and negligible effect on populations of lower trophic organisms. Effects on fish would be negligible due to the localized (node placement and retrieval) or dispersed (airgun discharges from source vessels) nature of the activities. Vessel activity could disturb birds, primarily incurring an energetic cost of moving away from the vessels or disturbance of nesting birds by field crews or helicopters—these effects are temporary. The level of effects on birds was determined to be moderate, primarily due to the potential for birds to strike vessels. Provided monitoring and operation procedures typically included in IHAs and LOAs are included—SAE will be required to submit these authorizations to BOEM prior to starting surveys—the levels of effect on marine mammals due to disturbance would be negligible. The only exception is the spotted seal, to which there could be a minor level of effect due to potential disturbance of a known haulout located in the project area. A number of terrestrial mammals could be disturbed by near shore and shore-based activities, but these effects would be negligible to minor with adherence to the Wildlife Interaction Plan/Procedure and compliance with State permits.

- **Subsistence Activities, Economy, Public Health, Environmental Justice, and Archaeological Resources**

The Proposed Action is short term, temporary, involves low levels of new employment and associated income, and no generation of property tax revenues will be realized by the NSB or State of Alaska. The Proposed Action is expected to have a negligible effect on employment, income, and revenue levels of the NSB.

SAE's plan of operation has identified mitigation measures to reduce potential impacts on subsistence activities. There may be slight disruption to subsistence based hunting during the Proposed Action period but no long-term impacts to health and well-being of Nuiqsut and Kaktovik will result. Environmental justice impacts from the Proposed Action will be negligible to minor.

There will be continued subsistence harvests sufficient to maintain nutritional status. SAE crews will be accommodated on ships and in existing camps, and since SAE is cooperating with NSB communities, negligible effects will occur to public health.

The Proposed Action has potential to impact Nuiqsut and Kaktovik summer marine subsistence hunts with negligible to minor effects on harvesting of bowhead whale, spotted, ringed and bearded seal, fish species and land based animals. Mitigation measures as described for a National Marine Fisheries Service (NMFS) IHA and in the SAE Wildlife Interaction Plan/Procedure would protect subsistence resources. A minor level of effect would result primarily from potential effects to the seal haul-out on the Colville River Delta under State jurisdiction. Effects from the Proposed Action should not be long-term, but limited to the season in which the seismic work is conducted: July – October 2014 and resulting impacts will be negligible to minor.

BOEM corresponded with the Alaska State Historic Preservation Office (SHPO) on May 30, 2014 and copied all tribal entities that the agency found that no historic properties would be affected – provided that the archaeological survey and flagging of cultural resources precedes seismic work so these sites can be avoided.

Significance Review (40 CFR 1508.27)

Consistent with 40 CFR 1508.27, significance is evaluated by considering both context and intensity. The potential significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the Proposed Action. For short-term, site-specific actions such as this one, significance would usually depend upon the effects in the specific location rather than in the world as a whole. Both short-term and long-term effects are relevant. For this Proposed Action, the context is the offshore environment and, to a smaller degree, the onshore environment. It is within this context that the intensity of potential effects of the Proposed Action is considered. Intensity refers to the severity of effect. Pursuant to 40 CFR 1508.27(b), the following ten factors have been considered in evaluating the intensity of the Proposed Action:

1. **Impacts that may be both beneficial and adverse.** Potential adverse effects of the Proposed Action to the physical environment, biological resources, and subsistence activities, in consideration of mitigation measures already incorporated into the Proposed Action and typically required by Marine Mammal Protection Act (MMPA) authorizations, are expected to be below thresholds that define significant effects in Appendix A of the EA. Overall, adverse impacts are expected to be negligible to minor. There are potential beneficial impacts for local residents employed in support of these activities, which are expected to be temporary and negligible. Therefore, the level of adverse and beneficial effects of the Proposed Action does not render the potential impacts significant.
2. **The degree to which the Proposed Action affects public health or safety.** Within its environmental analysis, BOEM considered the distance of the Proposed Action from local communities, potential effects of expected allowable discharges and emissions, and the potential for the Proposed Action to interfere with subsistence activities. Due to the limited duration and location of the Proposed Action, the Proposed Action is expected to have negligible impacts on public health or safety. Therefore, the degree to which the Proposed Action may affect public health or safety does not render the potential impacts significant.
3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** The Proposed Action would not take place in, or otherwise adversely affect, any historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. Consideration of potential site specific effects of the Proposed Action on unique geographical areas does not render the potential impacts significant.
4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** Whaling is a culturally self-defining practice of the Iñupiat people. Past stakeholder concerns related to anthropogenic noise in the Arctic marine environment have focused on the potential effects to marine species, particularly the bowhead whale, from impulse sounds associated with high-energy seismic surveys, such as those included in the Proposed Action. Concerns have also included potential effects of noise and vessel traffic on other marine mammals, fish, and birds; the biological significance of bowhead whales' responses to anthropogenic marine noise; and potential interference with subsistence activities. However, no substantial questions exist as to whether the Proposed Action may cause significant effects to these or any resources. Therefore, the potential effects of the Proposed Action are not anticipated to be highly controversial, and are not expected to render the potential impacts significant.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** There has been considerable public discourse regarding the effects of seismic activities on biological resources and subsistence hunting activities. There is scientific evidence suggesting that specific levels of sound may injure, disturb, or displace marine mammals. Further, traditional knowledge has also suggested that seismic surveys can disturb and displace marine mammals and reduce their availability for subsistence harvest.

However, seismic surveys have been conducted in the Federal waters of the Chukchi Sea since the late 1960s. BOEM environmental analyses (to include Environmental Assessments, Environmental Impact Statements, and Biological Evaluations) have consistently found that even large-scale seismic survey activities have not caused any significant impacts to the environment or to subsistence activities, and the analyses have not been contradicted by monitoring results or existing scientific literature. Independent analyses by the NMFS and the US Fish and Wildlife Service (USFWS) have verified these conclusions.

The effects of the Proposed Action are not expected to be highly uncertain, and the Proposed Action does not involve unique or unknown risks. Therefore, the degree to which the potential effects of the Proposed Action may be highly uncertain or involve unique or unknown risks does not render the potential impacts significant.

6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** SAE's permit application for the Proposed Action was submitted in accordance with 30 CFR Part 551, and the proposed activities are consistent with the overall objectives of the OCSLA. In compliance with the OCSLA, the regulations at 30 CFR Part 551, and DOI policy in 516 DM 15, BOEM has conducted a technical and environmental review of the Proposed Action. All Geological and Geophysical permit applications are subject to a review and evaluation by BOEM based on the specific facts of each permit and the proposed activities at issue. Thus, the Proposed Action here will not serve as a precedent for future actions or represent a decision in principle about a future consideration. Accordingly, the degree to which the Proposed Action may establish a precedent for future actions or represent a decision in principle about a future consideration does not render the potential impacts significant.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.** The EA considered the potential cumulative effects of the Proposed Action and other expected activities in 2014. The EA concludes that the Proposed Action is not anticipated to produce significant impacts or to incrementally add to the effects of other activities to the extent of producing significant effects. Therefore, the degree to which the potential effects of the Proposed Action may be related to other actions with individually insignificant but cumulatively significant impacts does not render the potential impacts significant.
8. **The degree to which the Proposed Action may affect districts, sites, highways structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The Proposed Action involves minor seafloor-disturbing activities with the placement of nodes on the ocean bottom, and will also involve the insertion of lathe in the ground for shore-based surveys. BOEM determined that no historic properties would be affected as long as the archaeological survey and flagging of cultural resources precedes seismic work so these sites can be avoided.

The Proposed Action is not expected to adversely affect, or cause the loss of, any scientific, cultural, or historic resources. Furthermore, the SHPO has concurred with BOEM's finding that no historic properties will be affected. Therefore, the degree to which the Proposed Action may adversely affect historic resources does not render the potential impacts significant.


9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** The Proposed Action is within the scope of the activities covered by current programmatic ESA consultations. These documents conclude that activities of the type contemplated in the Proposed Action are not likely to jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. SAE will obtain authorizations from the USFWS and NMFS under the MMPA. Such authorizations are only available where the Services determine that the number of marine mammals taken incidentally would be small, the activities would have no more than a negligible impact on the stock, and there would be no unmitigable adverse effects to subsistence activities.

Consistent with those determinations, the EA concludes that any adverse effects from the Proposed Action are expected to be short-term and localized. No destruction or adverse modification of critical habitat is anticipated. Therefore, the degree to which the Proposed Action may adversely affect endangered or threatened species or its habitat does not render the potential impacts significant.

10. **Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.** In determining whether the Proposed Action may violate Federal, State, or local law or requirements imposed for the protection of the environment, BOEM considered the information in the permit application from SAE, the Plan of Operations and other supporting documents, as well as SAE's commitment to obtain MMPA authorizations from NMFS and USFWS. Approval of the permit would be a conditional approval. Under the conditional approval, SAE may not commence survey activities prior to the receipt of all necessary permits and authorizations. BOEM also consulted with the SHPO under section 106 of the NHPA, and received a concurrence with the finding that no historic properties would be affected. There is no indication that the Proposed Action, if approved, would threaten a violation of Federal, State, or local law or requirement imposed for the protection of the environment.

Finding of No Significant Impact

I have considered the evaluation of the potential effects of the Proposed Action and the review of the 40 CFR 1508.27 significance factors. It is my determination that the Proposed Action would not cause any significant impacts and complies with the standards that no potentially significant impacts are expected to occur as a result of the Proposed Action. It is my determination that implementing the Proposed Action does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969.



Lisa Toussaint
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Alaska OCS Region

7/18/2014
Date

Attachment: Environmental Assessment, SAExploration Inc. Coleville River Delta 2014 3D Geophysical Seismic Survey, Beaufort Sea, Alaska. OCS EIS/EA BOEM 2014-605.

Copies of the EA can be obtained by request to Bureau of Ocean Energy Management, Alaska OCS Region, 3801 Centerpoint Drive, Suite 500, Anchorage, AK 99503-5823 or (800) 764-2627, or by accessing <http://www.boem.gov/ak-eis-ea/>