



# United States Department of the Interior

## BUREAU OF OCEAN ENERGY MANAGEMENT

Alaska OCS Region  
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Resource Evaluation

### FINDING OF NO SIGNIFICANT IMPACT

#### SAE On-Ice Seismic Survey

Geological & Geophysical Permit Application #14-01  
Beaufort Sea, Alaska

FEB 19 2014

U.S. Dept. of the Interior  
Bureau of Ocean Energy Mgmt.  
Alaska OCS Region

## Introduction

FEB 13 2014

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 an on-ice seismic survey proposed by SAE in the Beaufort Sea Planning Area of the Alaska outer continental shelf (OCS), to be conducted in 2014.

The proposed seismic surveys (Proposed Action) are detailed in a document submitted by SAE on November 4, 2013, subsequently revised December 9, 2013, titled "Umingmak Program Plan of Operations Winter Seismic Survey" (Plan of Operations). The Plan of Operations was submitted by SAE in support of its October 28, 2013 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, 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 December 19, 2013, on Regulations.gov, (docket BOEM-2013-0089), 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 January 10, 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 identify and map potential hydrocarbon-bearing formations and the geologic structures that surround them. 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 on-ice seismic surveys over an approximately 221 square mile area, including approximately 149 square miles of State of Alaska lands and waters and approximately 72 square miles of federal waters of the U.S. Beaufort Sea.

Seismic operations will be conducted using 12 rubber-tracked vibroseis buggies (seismic source), operating in groups of four. Receiver (geophone) lines will be placed perpendicular to source lines, a minimum of 660 feet apart. Geophones will typically be located every 110 feet along the lines, laid out by crews using rubber tracked vehicles or operating on foot.

Preliminary scouting activities and camp setup may begin as early as February 15, 2014. On-ice vibroseis activity is anticipated to start approximately March 1, 2014, depending on conditions.

### **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. This alternative would delay or preclude SAE from obtaining geophysical data to inform future decisions about potential exploration and development of Beaufort Sea OCS leases and could thereby result in delayed or lost opportunities to develop the OCS resources. This alternative would also delay or avoid potential impacts to the environment identified in the EA.

#### **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 from potential small fuel spills (less than 10 gallons) on ice or frozen ground would be temporary and result in a negligible level of effect.

- **Biological Resources**

The Proposed Action is expected to have negligible to minor, short-term effects on biological resources. The Proposed Action takes place on land or primarily bottom-founded ice so effects on fish, their habitat, and prey would be negligible. No adverse effects to lower trophic organisms are

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 required by LOA conditions, 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 the 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 no effects 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. Based on the timing and spatial location of the Proposed Action, there will be no impacts to bowhead whale migration. Impacts to seal, an important subsistence resource for Nuiqsut, (harvested March through December on sea ice) may be negligible to minor. 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, but these discussions focus on marine seismic rather than on-ice or land-based seismic generated by vibroseis buggies.

The "Vibroseis" exploration technique was developed by the Continental Oil Company (Conoco) during the 1950s and has been in use in the Arctic since the 1960's. Energy from vibroseis trucks is released into the ground; any remaining energy quickly dissipates into the air and does not impact physical or biological resources.

The effects of the Proposed Action are not highly uncertain, nor does the Proposed Action 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

anticipated. The level of effects on marine and coastal birds would be negligible because the survey activities in habitat used by marine and coastal birds would conclude prior to the birds' arrival in the spring. The only two marine mammals that are likely to be in the project area during mid-February through May are the polar bear and ringed seal. SAE has obtained a Letter of Authorization (LOA) from USFWS to avoid or minimize incidental takes of polar bears, and it is unlikely that the Proposed Action would disturb denning polar bears under conditions required by the LOA.

The Proposed Action is anticipated to result in a negligible level of effect to ringed seals if the following mitigation measures, intended to prevent damaging seal lairs or injuring ringed seals, are followed:

- 1) Survey all on-ice travel routes and operation areas where ringed seals may occur. Use a 150 m buffer between any known lair or breathing hole and each travel route and seismic source.
- 2) PSOs must be present to detect any ringed seal activity. Operations must cease immediately if any damage to a seal lair occurs and SAE must contact BOEM before restarting operations.

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

BOEM's subject matter expert determined that the local Economy will not be affected by the proposed action. Therefore, this resource is not analyzed in this EA.

This Proposed Action would not have a disproportionately high adverse human health or environmental impact to residents of the NSB. Due to the timing of the Proposed Action, there are no periodic disruptions to subsistence. Therefore, environmental justice impacts from this Proposed Action are negligible.

The Proposed Action is short-term and temporary and would have no measurable effects on NSB routines or community functions. Therefore, cumulative impacts to public health will be negligible.

The Proposed Action would have negligible to minor effects on subsistence harvests for the community of Nuiqsut. Potential impacts may come from aircraft, on-ice vehicles, equipment, and personnel operating in the project area. Potential impacts may be minimized through plans of cooperation, use of local subsistence resource representatives, and SAE's commitment to maintain communication with key entities in the community.

There would not be any bottom-disturbing activities or any other activities with the potential to affect historic resources as defined under the National Historical Preservation Act (NHPA).

### **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 tundra/on-ice environment and the community of Nuiqsut. 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:

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 does not include seafloor-disturbing activities (e.g., anchoring). Allowable discharges and emissions are not expected to affect the coastal area. The Proposed Action is not expected to adversely affect, or cause the loss of, any scientific, cultural, or historic resources. 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 has obtained a letter of authorization from USFWS under the MMPA. Such authorizations are only available where the Service determines 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 LOA from 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 determined that no consultation under section 106 of the NHPA is required. 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.

As an additional condition of their permit approval, SAE would be required to implement mitigation measures to avoid damaging seal lairs or harassing or injuring ringed seals. These mitigation measures include surveying all on-ice travel routes and operation areas where ringed seals may occur using a 150 m buffer around each travel route and seismic source. PSOs must be present to detect any ringed seal activity. Operations must cease immediately if any damage to a seal lair occurs and SAE must contact BOEM before restarting operations.

**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.



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Lisa Toussaint  
Regional Supervisor, Office of Environment  
Alaska OCS Region

2/13/14  
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Date

Attachment: Environmental Assessment, SAE 2014 On-Ice Seismic Survey, Beaufort Sea, Alaska. OCS EIS/EA BOEM 2014-007.

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/www.boem.gov>.