United States Department of the Interior
BUREAU OF OCEAN ENERGY MANAGEMENT
Alaska OCS Region
3801 Centerpoint Drive, Suite 500
Anchorage, Alaska 99503-5823

FINDING OF NO SIGNIFICANT IMPACT
SAExploration, Inc. 3D Cook Inlet 2015
Geological & Geophysical Seismic Survey
Lower Cook Inlet, 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 Cook Inlet Planning Area of the Alaska outer continental shelf (OCS), to be conducted in 2015.

The proposed seismic survey (Proposed Action) is detailed in a document submitted by SAE on October 29, 2014, titled "SAExploration 3D Marine Survey of Lower Cook Inlet 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 n EA on the Proposed Action was published on November 18, 2014, on Regulations.gov (Docket No. BOEM-2014-0099). The notice stated that "BOEM seeks public involvement in preparing an environmental assessment for a 2015 geophysical 3D Ocean Bottom Seismic Survey in Cook Inlet." The comment period was held from November 18, 2014 through December 12, 2014. One comment was 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 geophysical data 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 Cook Inlet OCS.

Description of the Proposed Action

SAE plans to conduct a three-dimensional (3D) ocean-bottom node (OBN) seismic survey over an approximately 698 square mile area, consisting of State waters and Federal waters of the lower Cook Inlet area of the Alaska OCS.

Seismic operations will be conducted using ocean-bottom recording nodes. The 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 503 m (1,650ft) apart. Source lines are 12 km (7.5 miles) long and spaced 503 m (1,650 ft) apart.

The survey activities would occur between March 1 and December 15, 2015. Approximately 18.75 mi^2 of patch will be shot daily with source activities only occurring during low and high slack tides, or when vessels can operate safely to acquire quality data.

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 approve the application for 2015 SAE Geophysical Exploration Permit 15-01 and the proposed seismic survey would not occur in waters under jurisdiction of the Federal government. SAE would not be able to identify and map potential hydrocarbon-bearing formations and the geologic structures that surround them. Not issuing the permit for the survey could result in delay in understanding of the geophysical makeup of the lower Cook Inlet, and a loss or delay of opportunities for discovery and extraction of natural resources, including any associated economic benefits.

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 Cook Inlet 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 the mobile nature of the vessels used for the seismic survey, along with the temporary conditions under which the survey and support ships operate, are not expected to allow transport of emissions to a single onshore location, nor allow accumulation of emissions sufficient for the concentration of the pollutants to exceed Federal air standards. Effects to water quality were considered with respect to insertion and retrieval of nodes, vessel discharges, and small fuel spills—all of these impact producing factors would be small, temporary, and localized, and result in a negligible to minor level of effect on water quality.

- **Biological Resources**

  The Proposed Action is expected to have negligible to minor, short-term effects on biological resources. Vessel operations and the noise associated with ship operations are not known to have adverse effects on benthic invertebrate populations, resulting in a negligible effect. The level of effects on fish is expected to range from negligible to minor depending on the specific activity and affected fish species. Vessel presence and activity could disturb birds. Flocks of migrating or flightless birds would generally move away from vessel activity but there are costs (energetic, lost foraging opportunity and displacement), although temporary and localized, associated with repeatedly moving away from vessel disturbances. Vessel collisions would have a minor effect on marine and coastal birds because lights onboard the vessel fleet will be shielded or oriented downward to avoid disorientation and collision with marine and coastal birds. While a few individuals could be injured or killed, the distribution, abundance, and overall survival of species would not be altered as a result. Overall, the level of effects on birds was determined to vary from negligible to minor with the affected species. Seismic activities have the potential to affect all marine mammal species found in Cook Inlet, the impacts of the effects are likely to vary from negligible to minor with the affected species. This is predicated on the assumption that the mitigations described in Section 2.1.2.6, and any further mitigations required by NMFS and the USFWS in their IHAs are followed.

- **Archaeological Resources, Subsistence Harvest and Sociocultural Systems, Economy, Public Health, and Environmental Justice**

  BOEM consulted with SHPO regarding effects that might result from the Proposed Action. BOEM made a finding that the use of nodes on the seabed, in conjunction with the use of pingers to avoid any geohazards, is the type of activity that has no potential to cause effects to historic properties as per 36 CFR 800.3(a)(1). The SHPO provided concurrence on January 21, 2015.

  Effects to subsistence harvest activities and sociocultural systems from the Proposed Action could result from (1) temporal/space-use conflicts (2) displacement of subsistence harvest resources because of noise from seismic survey activities (3) alteration of habitat by seismic survey activity which results in an area being unusable for subsistence harvest and (4) accidental discharge of fuel or other substances into the water which causes the subsistence resources to become either unavailable for harvest or undesirable for use. 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 would result. Overall, these impacts are expected to be negligible. Environmental Justice and Public Health impacts from the Proposed Action are expected to range from negligible to minor based on the analyses described for air and water quality, and subsistence and sociocultural activities.

  While there may be some employment opportunities and revenues from lodging and sales taxes, the proposed activities are short term, temporary, and localized, involving negligible levels of new employment and associated income and negligible generation of tax revenues accruing to the Kenai Peninsula Borough and its communities.

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 coastal 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 levels 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 and sociocultural activities. Due to the limited duration and location of the Proposed Action, the Proposed Action is expected to have negligible to minor 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.** Concerns related to anthropogenic noise in the marine environment have focused on the potential effects to marine mammals from impulse sounds associated with seismic surveys, such as those included in the Proposed Action. Concerns have also included potential effects of noise and vessel traffic on fish and birds, 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.

The potential risks associated with seismic surveys are not unique or unknown, nor is there significant uncertainty about impacts. 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 U.S. 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 lower Cook Inlet. 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. 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.** 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. Additionally, BOEM is engaging in Section 7 consultation with USFWS for Steller's eiders and with NMFS for beluga whales. Any measures required by IHAs or as a result of ESA consultation will be implemented.

Pending completion of these consultations, BOEM has determined that any adverse effects from the Proposed Action are expected to be short-term and localized. These levels of effects were premised on the standard suite of NMFS, USFWS, SAE Plan of Operations, and Biological Assessment. These required mitigation measures are described in Appendix A. 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 or prior to BOEM's completion of ESA consultations with USFWS and NMFS, respectively. 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. This determination is conditioned upon the following:

- Completing consultations with USFWS and NMFS under ESA Section 7
- Receiving IHAs from USFWS and NMFS under the MMPA
- Implementing all mitigation measures specified in or as a result of the IHAs or ESA consultations and SAE's Plan of Operations
- PSOs will be instructed to monitor for the presence of Steller's eider. If present, vessels will be instructed to avoid flocks of wintering eiders to within flushing ranges
- Implementing the following protocols to minimize impacts to marine and coastal birds:
    - Lights onboard the vessel fleet will be shielded or oriented downward to avoid disorientation and collision of eiders and other marine birds.
    - Seismic and surface support vessels will minimize the use of high-intensity work lights. High-intensity lights will be used only as necessary to illuminate active, on-deck work areas during periods of darkness or inclement weather, otherwise they shall be turned off.
    - All bird collisions shall be documented and reported within three days to BOEM and BSEE Environmental Enforcement Division. Each report shall include:

- date and time the bird was first observed
- location of vessel in decimal degrees
- species, identified to lowest possible taxonomic level using standardized American Ornithological Union (AOU) codes
- weather (at time bird was first observed): wind speed, fog, rain/snow
- general weather 24 hours prior to bird observation
- photographs of each bird labeled according to each record, if practicable (for dead birds, clear images of wing spread, top and bottom, and head views should be provided)
- vessel operational status: at anchor/adrift or underway/in transit
- any indications that lighting may have factored into attracting birds to the vessel (e.g., was extra lighting on because it was dark or a specific activity was ongoing?), and
- any additional comments on bird behavior, physical description, injury or fate

- Complying with all other statutory and permitting requirements

Frances E. Mann

Frances Mann
Acting Regional Supervisor, Office of Environment
Alaska OCS Region

2-5-15
Date

Attachment: Environmental Assessment, SAExploration Inc. 3D Cook Inlet 2015 Geological and Geophysical Seismic Survey, Lower Cook Inlet, Alaska. OCS EIS/EA BOEM 2015-007.

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/