



# United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT  
Alaska Outer Continental Shelf Region  
3801 Centerpoint Drive, Suite 500  
Anchorage, Alaska 99503-5823

**AUG 2 2013**

Memorandum

To: Regional Supervisor, Resource Evaluation

From: Regional Supervisor, Office of Environment *Li Sit*

Subject: National Environmental Policy Act Review of TGS's Proposed 2013 2D Seismic Survey, Chukchi Sea.

The Office of Environment has completed an environmental review of TGS's proposed 2013 seismic survey in the Chukchi Sea Planning Areas of the Alaska Outer Continental Shelf (OCS). Per Council on Environmental Quality regulations at 40 CFR 1501.3 and 40 CFR 1508.9, we have prepared an Environmental Assessment (EA) to determine whether the proposed action may result in significant effects (40 CFR 1508.27) that could trigger the need for preparation of an Environmental Impact Statement (EIS) and to assist BOEM planning and decision making.

Based on our analysis, we have determined that TGS's Proposed Action would not significantly affect the quality of the human environment (40 CFR 1508.27) and will not cause undue "harm or damage to, or waste of, any natural resources (including mineral deposits in areas leased or not leased), any life (including fish and other aquatic life), property, or the marine, coastal, or human environment" (30 CFR 551.6). We have determined that the preparation of an EIS is not required. The EA and Finding of No Significant Impact (FONSI) are attached.

Our analysis of the potential effects assumes that all aspects of the Proposed Action occur as described in the permit application and supporting materials and that TGS will comply with all other statutory and regulatory requirements. If these aspects of the Proposed Action are not met, our EA and FONSI would no longer be applicable and additional environmental review of the modified proposed activities may be needed.

In addition to the mitigation measures included in TGS's Plan of Operations, we request that the Regional Supervisor, Resource Evaluation include the following as conditions of approval in the G&G permit:

### **Special Conditions for Marine and Coastal Birds**

The following mitigation measures/special conditions originate in the Biological Opinion (USFWS, 2012) with minor technical changes based upon implementation of similar mitigation and monitoring measures by industry in 2012. Upon implementation, the proposed action would be in conformance with the 2012 Biological Opinion.

1. No TGS operations may take place in the Ledyard Bay Critical Habitat Unit (LBCHU), an

area important to spectacled eiders. The only exception for TGS vessels to enter the LBCHU is for reportable marine casualties as defined in 46 CFR 4.05-1 or hazardous conditions as defined by 33 CFR 160.204. Entries into the LBCHU due to marine casualties or hazardous conditions must be reported to BSEE- Environmental Enforcement Division (BSEE-EED) and BOEM, Resource Evaluation Office (BOEM-RE) within 24 hours of occurrence.

2. TGS will minimize the use of high-intensity work lights on their vessels, especially within the 20-m bathymetric contour. Exterior lights will only be used as necessary to illuminate active, on-deck work areas during periods of darkness or inclement weather; otherwise they will be turned off. Interior and navigation lights should remain on as needed for safety.

3. All birds encountered on TGS vessels (birds landing on or striking the vessel) are to be reported within 3 days of occurrence to BSEE-EED and BOEM-RE. Each report shall include the following items to be considered complete:

- Date and Time the bird was first observed.
- Location of vessel in decimal degrees (format: latitude XX.XXXX longitude – XXX.XXXX).
- Species, identified to lowest possible taxonomic level using standardized AOU codes.
- Weather (at time bird first observed): wind speed, fog, rain/snow.
- General weather 24 hours prior to bird observation.
- Photographs of each bird (if practicable).
- Vessel operational status: at anchor/adrift or underway/in transit.
- Any indications that lighting may have factored into attracting birds to the vessel (was extra lighting on because it was dark or a specific activity was ongoing?).
- Any additional comments on bird behavior, physical description, injury or fate.

In addition, we request that TGS provide to the Alaska Region a copy of the 90-day report required by National Marine Fisheries Service.

Attachments:

Environmental Assessment, TGS, 2013 Seismic Survey, Chukchi Sea OCS EIS/EA BOEM 2013-0729.

Finding of No Significant Impact (FONSI), TGS, Permit Application #13-02, 2013 2D Seismic Survey, Chukchi Sea

**FINDING OF NO SIGNIFICANT IMPACT**  
TGS 2013 2D Seismic Survey  
Geological & Geophysical Permit Application #13-02  
Chukchi 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 2D seismic surveys proposed by TGS for the Chukchi Sea Planning Area of the Alaska outer continental shelf (OCS) in 2013.

The proposed seismic surveys (Proposed Action) are detailed in a document submitted by TGS on March 11, 2013, and titled "Chukchi Sea 2D 2013 Plan of Operations" (Plan of Operations). The Plan of Operations was submitted by TGS in support of its February 12, 2013, application for a Permit to Conduct Geological or Geophysical Exploration for Mineral Resources or Scientific Research on the Outer Continental Shelf. 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 proposed action is summarized at the end of chapter 2 of the EA.

On April 24, 2013, a notice of preparation of an EA on the Proposed Action was published on Regulations.gov in docket BOEM-2013-0018, 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 10, 2013. Six comments were received. The comments were from the Native Village of Kotzebue, Alaska Eskimo Whaling Commission, North Slope Borough, Earthjustice (on behalf of nine other non-governmental organizations), and two private individuals. Subject matter experts at BOEM reviewed the comments and addressed substantive issues or concerns in the Environmental Assessment, as appropriate.

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 Chukchi Sea OCS.

### **Description of the Proposed Action**

TGS plans to conduct approximately 9,600 km of 2D marine seismic surveys along predetermined track lines using a vessel towing a 3,280 cubic inch seismic source array and an 8,100 meter long hydrophone solid streamer. The seismic source will be towed 118 meters behind the survey vessel at a depth of 6 meters. The hydrophone cable will be towed at a depth of 10 meters.

The Proposed Action cannot be conducted in broken ice, and pack ice will be avoided. The surveys will be conducted up to 24 hours per day, subject to potential shut-down as may be necessary to mitigate impacts to marine mammals. The full 3,280 cubic inch sound source will only be run during operations on and near the end and start of survey lines. During turns and transits between survey lines, a single “mitigation” airgun of 60 cubic inches or smaller will be operated.

The activities are expected to begin in OCS waters between approximately July 15 and August 5 and occur over a period of 45 to 60 days, and operations will be completed on or before October 31. In addition, up to 33 days of seismic operations may occur in international waters. We note that although BOEM’s jurisdiction is limited to the portion of the Proposed Action in the OCS, BOEM analyzed the effects of the international waters portion of the Proposed Action in the EA.

### **Environmental Assessment**

BOEM evaluated the Proposed Action and a No Action alternative. Other alternatives were considered but not analyzed because they were determined to be impractical or unfeasible.

#### **Alternative 1. No Action.**

Under this alternative, BOEM would not issue TGS a permit for the Proposed Action, and the Proposed Action would not occur. This alternative would delay or preclude TGS from obtaining geophysical data to inform future decisions about potential exploration and development of Chukchi 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 TGS 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 Chukchi 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 from potential vessel discharges on water quality would be temporary and could result in a minor level of effect.

- **Biological Resources**

The Proposed Action is expected to have negligible to minor, short-term effects on biological resources. The effects on fish, their habitat, and prey in the immediate vicinity of the survey vessels would be negligible, but the combined effects of the activities over the duration of the project would be minor. There may be disruption of life cycles for some lower trophic organisms, but these effects are expected to be negligible due to the temporary nature of the activities. The level of effects on marine and coastal birds would be minor, primarily due to the potential for collisions with vessels. Effects on marine mammals due to disturbance would be negligible with implementation of monitoring and operation procedures typically included in IHAs and LOAs, which TGS has committed to obtaining prior to commencing seismic activities. The Pacific walrus is an exception, as walrus could be encountered more frequently during a brief migration in the open water season, and thus, the potential adverse effects on walrus could rise to the level of minor.

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

**Subsistence Activities** –The largest source of potential conflicts may be derived from the effects of noise associated with seismic survey vessels and airgun noise on the abundance and distribution of marine mammal species in subsistence harvest areas. Effects should not be long-term but limited to the season in which the activities are conducted, which is July through October, 2013. The Proposed Action could cause negligible to minor impacts to subsistence resources.

**Economy** – The activities that would be conducted under the Proposed Action are short term and temporary, involving low levels of new employment and associated income and no generation of property tax revenues accruing to the North Slope Borough (NSB) or State of Alaska. Therefore, the activities are expected to have negligible effects on employment, income, and revenue levels of the NSB.

**Public Health and Environmental Justice** – The Proposed Action does not have the potential to have more than negligible to minor effects on public health. The Proposed Action will have no long-term consequences to public health and well-being in NSB communities. The Proposed Action will have a negligible level of effect on Environmental Justice.

**Archaeological Resources** – There will 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 offshore 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 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 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 only negligible 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. 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 the 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 resource. Therefore, the degree to which the potential effects of the Proposed Action may be highly controversial does not 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 1960's. 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 National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS) have verified these conclusions.

The effects of the Proposed Action are not expected to be 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.** TGS'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 nor 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 2013. The EA concludes that the Proposed Action is not reasonably 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 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. Prior to conducting is proposed seismic activities, TGS has committed to obtain an incidental harassment from NMFS and a letter of authorization from USFWS 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 TGS, the Plan of Operations and other supporting documents, as well as TGS's commitment to obtain incidental take authorizations from NMFS and USFWS. Approval of the permit would be a conditional approval. Under the conditional approval, TGS may not commence survey activities prior to the receipt of all necessary permits and authorizations, including ESA and MMPA authorizations from NMFS and FWS. 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.

#### **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

August 1, 2013  
Date

Attachment: Environmental Assessment, TGS 2013 2D Seismic Survey, Chukchi Sea, Alaska. OCS EIS/EA BOEM 2013-0729.

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>.