



BUREAU OF LAND MANAGEMENT
Arctic District Office
222 University Avenue
Fairbanks, Alaska 99709-3816
<http://www.blm.gov/ak>



May 22, 2018

In reply refer to:
FF097424
3152.00 (AKR000)

Ms. Suzan Simonds
Permit and Regulatory Manager
SAExploration Inc.
8240 Sandlewood Place, Suite 102
Anchorage, Alaska 99507

Subject: Oil and Gas Geophysical Exploration Application

Dear Ms. Simonds,

Title II of the Tax Cuts and Jobs Act of 2017 directed the Secretary of Interior to establish and administer a competitive oil and gas program within the Coastal Plain of Alaska. Because the Bureau of Land Management (BLM) manages the National Petroleum Reserve in Alaska (NPR-A) pursuant to the Naval Petroleum Reserves Production Act (1976), the BLM has been identified as the lead agency for permitting oil and gas related activities in the Arctic National Wildlife Refuge Coastal Plain area, including seismic exploration activities. Within the BLM the Arctic District Office has been tasked to process seismic applications for the area.

On April 19, 2018 the Alaska BLM State Office received an application from SAExploration to conduct seismic activity in the 1002 area of the Alaska National Wildlife Refuge. On May 3, 2018 the BLM Arctic District received a nonconfidential version of the plan of operations. BLM and USFWS met on May 4th to discuss the proposed action.

The regulations that cover the proposed action are 43 CFR 3152, Exploration in Alaska. Part 3152.1 provides information on what is required to be submitted as part of the application. SAExploration has provided information for items a thru f. Part f requires a plan for conducting the exploration activities. While SAExploration has submitted a plan of operations, the plan does not provide enough information for the BLM to adequately evaluate impacts of the proposed action on the environment as required by the National Environmental Policy Act (NEPA).

Please see attached list of questions entitled: "Marsh Creek 3D 2018 Winter Seismic Survey Plan of Operations (POO) BLM/USFWS Comments and Questions." We would ask that you respond to the questions and comments as soon as possible so that we may begin the NEPA process on the proposed action. Once BLM receives the answers to the attached questions we will start the 90 day review clock as required by 43 CFR 3152.2 a. and notify you if the 90 days cannot be met and refine our estimation of time needed to process your application

If you have any questions please contact Donna Wixon of my staff at 907-474-2301.

Sincerely,
Nichelle Jones, Manager



Arctic District Office

Enclosures (1):

Marsh Creek 3D 2018 Winter Seismic Survey Plan of Operations (POO) BLM/USFWS Comments and Questions

Marsh Creek 3D 2018 Winter Seismic Survey Plan of Operations (POO): BLM/USFWS Comments and Questions

General comments:

1. What kind of lighting will be needed - tall light posts for equipment and storage areas; aircraft operations, localized lighting for worker camps, seismic line work, etc?
2. What is the normal and peak operating decibel levels of the camp generator and hours of operation each day or 24/7?
3. What are the total miles of seismic trails planned?
4. Will SAExploration Inc. be submitting a more detailed map of the actual proposed area of survey? This would greatly help in addressing impacts.
5. Does SAExploration, Inc. plan to avoid native allotments entirely?

Section 4.0 Environmental Management

1. Please provide a write up of how you are doing things differently based on lessons learned from the past.
2. What are the steepest slopes that you would be conducting activity on and how do you propose to protect soil and vegetation?

Section 5.0 Cultural Interface

1. This section mentions coordination with Kaktovik, what about Arctic Village and Venetie?
2. Applicant needs to submit a Subsistence Plan that meets the requirements of the 2013 Record of Decision (ROD) Best Management Practice (BMP) H-1 and also include:
 - Precise meeting dates and locations.
 - The names of and contact information for subsistence representatives and the biologist hired by SAE to work with the panel.
 - Reporting on mitigation measures and conflict avoidance agreements, if any, developed through such consultation.
 - Documentation of notification to allotment owners and camps and cabins users.
 - Procedures necessary to facilitate access by subsistence users to conduct their activities.
3. Applicant needs to follow the requirements of BMP H-2.

Section 6.0 Oversight Panel ¹

1. When will the oversight Panel be formed?
2. How many people will be on the panel?
3. What types of people will be on the panel?
4. Will its members be residents of Kaktovik only?
5. Will the panel only report to Kaktovik?

¹ BLM would like to set up a meeting in June or July to discuss.

6. Does “cultural sites” refer to archaeological, historic, and/or traditional land use sites? If so, will this subsistence observer also be an archaeologist with access to the Alaska Heritage Resources Survey (AHRS) database (maintained by the Alaska State Historic Preservation Office) and the Traditional Land Use Inventory (TLUI) site within the study area (maintained by the North Slope Borough Department of Planning and Community Services)?

Section 7.2 Training Process

1. Please provide an Orientation Program Plan following NPR-A BMP I-1 for BLM’s approval.

Section 8.0 Permit Requirements

1. In table please include ESA Consultation under BLM
2. In table, under ADFG and Fish Habitat Permits, please add stream/river crossings.
3. In table under other approvals what lease holders are in the area?
4. What public outreach has taken place prior to application submittal, or as of today’s date?²

Section 9.0 Mobilization and Access

1. “The crews will mobilize to existing gravel pads which will allow access to the tundra and provide a resupply area for the crews” (Page 7: SAExploration 2018). These gravel pads are not identified in the POO – whether inside the 1002 area boundary or adjacent to it. Where are the gravel pads and travel corridors? Locations of ingress and egress? Please submit a map showing ingress and egress with land status layer.
2. SAE states "SAE will attempt to coordinate with companies to use any existing or planned trails." There are no existing trails in the permit area, what other companies are you referring to?
3. How close does the campsite need to be to the area you are working in?
4. What criteria will be used to determine if snow depth and coverage is adequate to minimize damage to the tundra vegetation?
5. Does SAE have a contingency plan should snow depth and cover not be adequate to minimize soil compaction and vegetation damage?
6. Please provide routes and what type of activity, storage, etc. that will occur at locations within the permit area.
7. Please provide a description of the current camp move practices and how they would help to protect the tundra.
8. Are there ice or snow roads between Dalton Highway and Point Thompson that you could travel on to reduce tundra damage? If not, could you travel some of the distance on sea ice?

² BLM would like to set up a meeting in June/July to discuss.

9. What are the operating plans and environmental protection protocols for tundra travel? How will these protocols differ for different snow and soil conditions and for travel on steep slopes, areas with sensitive soil/vegetation types, and near special areas (e.g. groundwater-fed springs, overflow ice, ice-hummocks, and waterbodies that may support fish?
10. For each type of activity/equipment (e.g. camp moves, resupplies, snow machine access, refueling, transport of fuel and hazardous chemicals), describe what the environmental regulations/limits will be for the following:
 - a. What is the maximum slope that operations for each type of activity/equipment would occur on? This information will allow us analyze the potential for impacts of different activities (e.g. fuel storage, transport of hazardous materials, camp moves, seismic) would be occurring on steep slopes.
 - b. What are the criteria for snow and soil characteristics that will be required for each type of activity/equipment? Will these criteria vary with slope and type of soil and vegetation?
11. Please provide the following information broken down in a table and linkable to GIS format along with a map:
 - a. Proposed route distance
 - b. Timing
 - c. Type of activity (e.g. resupply, camp move)
 - d. Type of equipment (e.g. vehicle type, sled, skis)
 - e. Weight of vehicle/equipment empty
 - f. Weight of equipment/vehicle fully loaded
 - g. Pounds per square inch (PSI) pressure of vehicle, sled, or skis empty
 - h. Pounds per square inch (PSI) pressure of vehicle, sled, or skis fully loaded (note – this especially important for sleds or vehicles that haul large volumes of water or fuel, kitchen and bath units, etc.)
 - i. Total footprint of all vehicle or other equipment in contact with ground
 - j. Type of tire (tracked versus wheeled)
 - k. Track material (e.g. steel versus rubber)
 - l. Are tracks cleated or uncleated? Number of times a particular route would be exposed to a particular PSI from a particular vehicle, sled, or skis.
 - m. Maximum slope that this equipment would travel on and at what weights (minimum and maximum)
 - n. Snow depth requirements for this type of vehicle/equipment
 - o. Freezing depth requirements for this type of vehicle/equipment
 - p. Are hazardous material transported on this type of equipment?
 - q. Is more than 500 gallons of fuel be transported on this type of vehicle/equipment?
12. How and where will snow be gathered and moved for construction of snow trails and ramps?
13. How far can snow be transported for trail making?
14. What are the topographic and other criteria that elicit the need for creating snow ramps?
15. Verify that you would be prepacking snow trails.

16. What vehicles would be used for prepacking?
17. What equipment would be used for moving and placing snow?
18. How many resupply trips will be needed along routes?
19. How many vehicles and what type will be involved in resupply trips?
20. Will resupply vehicles use existing trails?
21. For the expected size and shape of the grid area, how many miles of camp move trails would there be within the work area (not including miles of access to reach the edge of the project area)?

Section 10.0 Survey and Ice Check

1. What does low snow years mean exactly? If it means they will ensure that enough snow cover is present for equipment movements, then what are the minimum snow depths? Will tundra freeze-down be quantified prior to and/or during operations?
2. What provisions are there for the possibility that snow conditions deteriorate before the train returns?
3. Where would snow surveys be done in order to decide when exploration could begin?³
4. How will SAE gather data on frost and snow conditions?
5. There can be large expanses with no snow cover in the 1002 Area. What are the contingency plans in the event extensive areas with low snow cover and/or unfrozen ground are encountered?
6. What Lakes, rivers or sea ice would be traveled across?

Section 11.0 River Crossings (and lake)

1. This element of the operations cannot just be permitted with ADF&G. In addition to ADF&G FHPs, the BLM & FWS must evaluate this activity as part of the NEPA process. The BLM already has some Best Management Practices (in the 2012 NPR-A IAP) related to stream/river crossings that can be used for guidance, but site specific evaluations will be necessary to determine if these BMPs or a modified version of the BMPs are most appropriate for this landscape. (Comment not question).
2. Describe how deep/steep banks would be crossed.
3. The POO provides no specific information on accessing water, water requirements, or ice bridge locations. Please provide.
4. Please provide a map that shows stream and lake crossings with a table that identifies the latitude and longitude of the corresponding crossings.
5. What are the proposed locations for ice bridges? Where will water for construction of ice bridges come from?
6. Does SAE propose any baseline monitoring of ice depth, winter water volume, invertebrates, fish, and water chemistry
7. If a crossing needs to be reinforced/built up for supporting equipment, where will liquid water come from? The BLM currently does not allow liquid water to be removed from rivers during the winter. If liquid water may need to be removed from lakes to build any

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“ice bridges”, then the volumes would need to be accounted for in the lake water use request to the BLM/FWS for evaluation in the EA and in ADF&G FHPs and ADNR Temporary Water Use Permits.

8. Would the removal of snow for this purpose only occur on areas of grounded ice (from lakes and/or rivers)?
9. Would the removal of ice aggregate from grounded ice areas on a river be requested?

Section 12.0 Willow Protocol

1. What criteria will be used to identify location and size of sensitive willow areas?
2. Will other vegetation types sensitive to seismic activities be considered when designing and constructing snow roads and trails? (Sensitive vegetation types include moist tussock tundra and low shrub vegetation categories.)
3. Please provide a weed plan following requirements of the NPR-A BMP M-2 for BLM Approval.

Section 13.0 Recording Operations (and sound)

1. What is the frequency, intensity, and duration of vibroseis?
2. What is the proximity to non-fish bearing and fish bearing waterbodies?
3. Provide the location of waterbodies and table of information of the proximity to non-fish bearing and fish bearing waterbodies.
4. With the 3D seismic, is there a distance that a line could be altered if needed for some reason without compromising the data?
5. Please verify that vibrators would not be operating on lakes or rivers.
6. If vibroseis shots will be made over liquid water under ice, the permittee needs to review the following document and indicate how they would implement or otherwise address recommendations made to reduce potential impacts to fish.
Morris, W., and J. Winters. 2005. Fish Behavioral and Physical Responses to Vibroseis Noise, Prudhoe Bay, Alaska 2003. Technical Report No. 05-02. Alaska Department of Natural Resources, Office of Habitat and Permitting.
7. What is SOS Methodology?

Section 14.0 Camp Facilities

1. How many camp areas will be used?
2. How many days on average will a camp be on a site?
3. How much water will be required for camp each day?
4. What are the water requirements each year for this project?
5. Provide a more detailed description of grey water discharge
6. What is the maximum gradient the tracked tractors can pull the camp sleds?
7. Section 14 states: “If existing airstrips are within the project area those area may be utilized to allow personnel, food and fuel to be delivered to the work area”. Are there existing airstrips in the project area?
8. What is the predetermined route?

9. What is the Vsat communication system?

Section 15.0 Water Withdrawal (from lakes)

1. Would snow for drinking water only be removed from grounded ice areas?
2. Water volume (liquid water and ice aggregate) requests must be made for each specific lake that might be used, for evaluation in the EA.
3. What information does SAE plan to collect or compile for planned use lakes.⁴

Section 16.0 Temporary Snow Air Strips

1. Are you proposing to use water and or ice chips to prepare landing strips on lakes?
2. When lakes cannot be used as airstrips, what is the site prep for tundra air strips?
3. What equipment is involved in creating and maintaining airstrips?
4. We need to know which specific lakes might be used for an airstrip, the size of the airstrip, the procedure for building and maintaining an airstrip, and the intended placement and orientation.
5. If airstrips are built on lakes, additional data collection may be required to provide data regarding the extent of additional freeze-down under the airstrip, as compared to the remainder of the lake.
6. What is the operating plan for working in areas that fixed-wing aircraft cannot access? Is there a need for helicopter access?
7. How many crew swaps will be carried out? i.e. how many times will an airstrip be used per week?
8. What type of aircraft will be used? Wheeled or skis?
9. Section 16 states: "SAE will create a flat area on predetermined grounded, frozen lakes, or tundra to serve as landing strip to receive the aircraft for crew changes." This is in the Temporary Snow Airstrips section. Will tundra airstrips be built of snow or will ice be needed to make the airstrip?

Section 17.0 Fuel Supply and Storage

1. How much fuel will be used per day?
2. How much fuel will be used for each year of the project?
3. What are the proposed locations for refueling and fuel storage?
4. What is the maximum amount of fuel that will be stored at a particular location? How many of these locations will there be at a given time and during the entire course of the project?
5. The POO states that the refueling distance from waterbodies would be 100 feet. The BLM NPR-A BMP requires 500 ft distance and we will consider this requirement for this project. We allow a deviation from the 500 ft. in the NPR-A because of the high density/close proximity of so many lakes that makes it impractical in many areas.

⁴ BLM would like to set up a meeting in June/July to discuss.

6. Provide a copy of the SPCC plan(s) for this project with site-specific information included. Until it is complete provide:
The size, type, and number of fuel storage tanks or other containers.
What type of equipment/supplies will be available on site to respond to a spill?
Describe any training requirements for employees handling fuel.
7. Since there will be no refueling within a certain distance of any waterbody, what is the protocol for aerial fuel delivery, should it be needed. Will fuel be delivered in drums or will a tanker be used?

Section 18.0 Waste Management

1. What are the volumes and proposed locations of discharge of gray water? How many gray water discharge locations will there be?
2. Provide a copy of your APDES permit, and any requirements it may have for treatment before discharge.
3. Provide a hazardous waste plan following the requirements of the NPR-A BMP A-3.
4. Provide a Comprehensive Waste Management Plan following the requirements of the NPR-A BMP A-2.
5. What types of wastes are anticipated to be generated by seismic operations?

Section 19.0 Wildlife

1. What is the intensity and wavelength of sound of equipment?

20.0 Historic and Cultural Resources

1. Is SAE implying that buffers for historic and cultural resources be determined from a point on the map that indicates the general vicinity of these resources or will the buffer be drawn from the actual area that resources cover?
2. In response to the “if required,” in addition to background research of documented (“known”) cultural (historic, prehistoric, and TLUI) sites, SAE Exploration should conduct archaeological field surveys of all proposed travel routes and survey locations prior to the proposed seismic survey.⁵
3. The 500 foot minimum avoidance boundary around all cultural sites is adequate for seismic exploration. However, does SAExploration plan to consider the boundaries of all sites within the proposed seismic testing areas?
4. Most of the sites in both the AHRS and TLUI are referenced geospatially by a 1-dimensional point that is typically somewhere near the center of a 2-dimensional area. Sometimes cultural remains within a site can be distributed over hundreds of meters, thus extending beyond a roughly 150 meter (500 foot) buffer. SAExploration should not only survey for undocumented sites within the proposed seismic study areas, but also consider sites documented in the AHRS and TLUI databases and that are within the proposed seismic study areas. These sites should be included in the 2018 cultural field survey,

⁵ BLM would like to set up a meeting in June/July to discuss.

where archaeologists should at minimum map the boundaries (i.e. the extent of cultural remains within a site) of sites within the seismic study areas that are spatially referenced by a point. Site buffers should then extend 500 feet from the site boundary.

Appendix D:

1. Request more photos, including camp sleighs, long haul fueler, Case/Steiger tractor, CAT dozer and CAT loader.

Appendix F: Wildlife Interaction Plan

1. In the SAE plan of operations, “heavy equipment” and “seismic activity” with regard to wildlife interactions needs to be further defined. For example, if there is a one mile avoidance area for a polar bear den, does that apply to laying of recording devices by hand or smaller vehicle, or just to the large vibroseis activity? For example, does a one mile avoidance area mean that no personnel, equipment, gear or anything else will come within one mile of a polar bear den? Does this apply to seal birthing dens and grizzly bear dens as well?
2. “A polar bear den detection survey shall be conducted prior to activities occurring in polar bear denning habitat during the maternal denning period (November to mid-April).” How will this survey be conducted?
3. Will all suitable denning habitat within the entire 1002 area be surveyed?
4. What is the survey design, operating procedure and resulting accuracy in identifying denning sites? Are these surveys done prior to any other activity or occupation of an area including caching equipment or fuel or conducting reconnaissance surveys to assess ice conditions, locations for camp moves, etc?⁶
5. The data provided for polar bear numbers in the southern Beaufort Sea is out of date (Page 23 Polar Bears: SAExploration 2018).
 - a. Current estimate of polar bears in the Southern Beaufort Sea population is estimated to be 900 and declining (see Bromaghian 2010)
 - b. Global population is estimated to be 22,000 – 31,000 with an average of 26,000 (see FWS 5-year review 2017)
6. “Aircraft will avoid flying over ideal Polar Bear habitat including but not limited to sea ice and barrier islands.” Please define what is considered to be “ideal” polar bear habitat.
7. “Vessels and aircraft will avoid areas in which subsistence hunting is being conducted.” Are vessels being used for this project? If so please describe.
8. “The Project Manager and wilderness guides have overall responsibility.” What are “wilderness guides” (also called wildlife guide in some places in the document)? Please describe training and responsibilities. This is not a position that was described in the polar bear section of this plan.
9. If the bear takes refuge near or in a vehicle and does not appear likely to move, crew HSE will be notified depending on the location of operation. No action will be taken unless

⁶ BLM would like to set up a meeting in June/July to discuss.

authorized by the AKFG or their designated agents.” Assuming that AKFG is the Alaska Department of Fish and Game (ADFG), please correct in all locations in document.

10. Field Operating Procedure Polar Bear Protocol

- a. In numbers 1 and 7 of this protocol include the distance that must be maintained from known densities.