



BP Exploration (Alaska) Inc.  
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900 E. Benson Boulevard  
Anchorage, AK 99519-6612  
USA

February 21, 2013

Dr. Bill Ingersoll  
Chief, Plans Section  
Bureau of Ocean Energy Management  
Alaska OCS Region  
3801 Centerpoint Drive , Suite #500  
Anchorage, Alaska 99503-5823

Request for Approval for Ancillary Activities  
2013 Winter Geotechnical and Seabottom Investigation  
Liberty Development  
Beaufort Sea, Alaska

Dear Dr. Ingersoll:

BP Exploration (Alaska) Inc. (BPXA) requests approval to conduct a 2013 Winter Geotechnical and Seabottom Investigation in support of the Liberty Development. The purpose of the investigations are to provide soils information for possible future pad locations, for evaluating proposed pipeline routing, and to provide a visual inspection of the seabottom environment.

In support of this request, attached is the Project Description/Plan of Operations and Figures 1 and 2.

If you have any questions or need additional information regarding this project, please contact me at (907) 564-4941 or via email at [mike.brock@uk.bp.com](mailto:mike.brock@uk.bp.com) or Erika Denman at (907) 564-4646 or via email at [erika.denman@bp.com](mailto:erika.denman@bp.com).

Sincerely,

Mike Brock, Environmental Team Lead  
HSE-Alaska

## **2013 Winter Geotechnical & Seabottom Investigation Project Description / Plan of Operations**

### **Introduction**

BP Exploration (Alaska) Inc. (BPXA) proposes to conduct a geotechnical investigation and a visual inspection of the seabottom in support of the Liberty development. See Figure 1.

### **Purpose**

The purpose of the investigations is as follows:

- Provide soils information for the possible future pad locations
- Provide soils information for evaluating proposed pipeline routing
- Provide a visual inspection of the seabottom environment

### **Scope of Work**

#### ***Geotechnical Investigation:***

The field team will drill approximately 40 geotechnical boreholes from the sea ice to depths of approximately 100 feet below the seabottom in the vicinity of the Liberty Development to explore the subsurface conditions. Approximately five geotechnical boreholes are planned to be drilled in federal waters.

A drill specifically configured for shallow soils exploration will be used for this project. The drill will be mounted in an enclosed trailer so that the drill and work area are protected from the weather by an enclosure. A generator and all support tools will be carried on the trailer or accompanying Rolligon. Additionally, a second Rolligon will provide support and include two 500 gallon double walled fuel tanks for fuel re-supply. The drill enclosure also has a 250 gallon double walled day tank.

Drilling muds or additives will not be used for the geotechnical program. The program proposes to use seawater to circulate the in-situ soil (cuttings) to mudline during drilling and casing operations.

During casing operations, drill cuttings would be placed on the ice surface where cutting would either freeze on the ice surface or return down hole. Typically, when drilling through floating ice, soil cuttings are not brought to the surface. However, in near-shore areas where the sea ice is bottom fast or near bottom fast, some cuttings may come to the surface of the ice. This material (generally less than a cubic yard) will be left on the ice surface to be naturally redistributed as the ice melts in the spring. Upon borehole completion, the site is inspected to verify all debris is collected and properly disposed.

Closed PVC pipe will be placed in boreholes and left in place when the borings is backfilled with natural soil cuttings. Temperature acquisition cables (TAC) placed in the PVC pipe will be used to measure the ground temperature profile. PVC pipe and TACs will be removed above the seabottom where practicable (e.g., sea ice movement doesn't prevent removal).

A roller-driven Rolligon will pull the enclosed drill trailer within the project area. A second Rolligon will support the drilling operation by assisting drill moves, providing fuel, and act as a

personnel carrier, when needed. A tucker will also be used for personnel support and environmental observations. The Rolligons will access the borehole locations by crossing frozen sea ice from the Endicott access road. Snow clearing activities (e.g., drag) may be conducted to maintain the route. The field team may also utilize a conventional pumper unit (used for ice road construction and equipped with a large auger) to make holes for water to thicken the ice and construct ice pads as necessary. A 200 foot by 25 foot ice pad is proposed to be constructed off the existing Endicott bypass ice road as shown in Figure 2.

***Seabottom Investigation:***

A visual inspection of the seabottom is proposed using a remotely operated vehicle (ROV). The ROV will be tethered to the controlling unit at the surface capable of capturing video images of the seafloor.

The field team will utilize a conventional pumper unit and a Tucker vehicle to accomplish the work. The access routes and work areas will be the same as the geotechnical boring program.

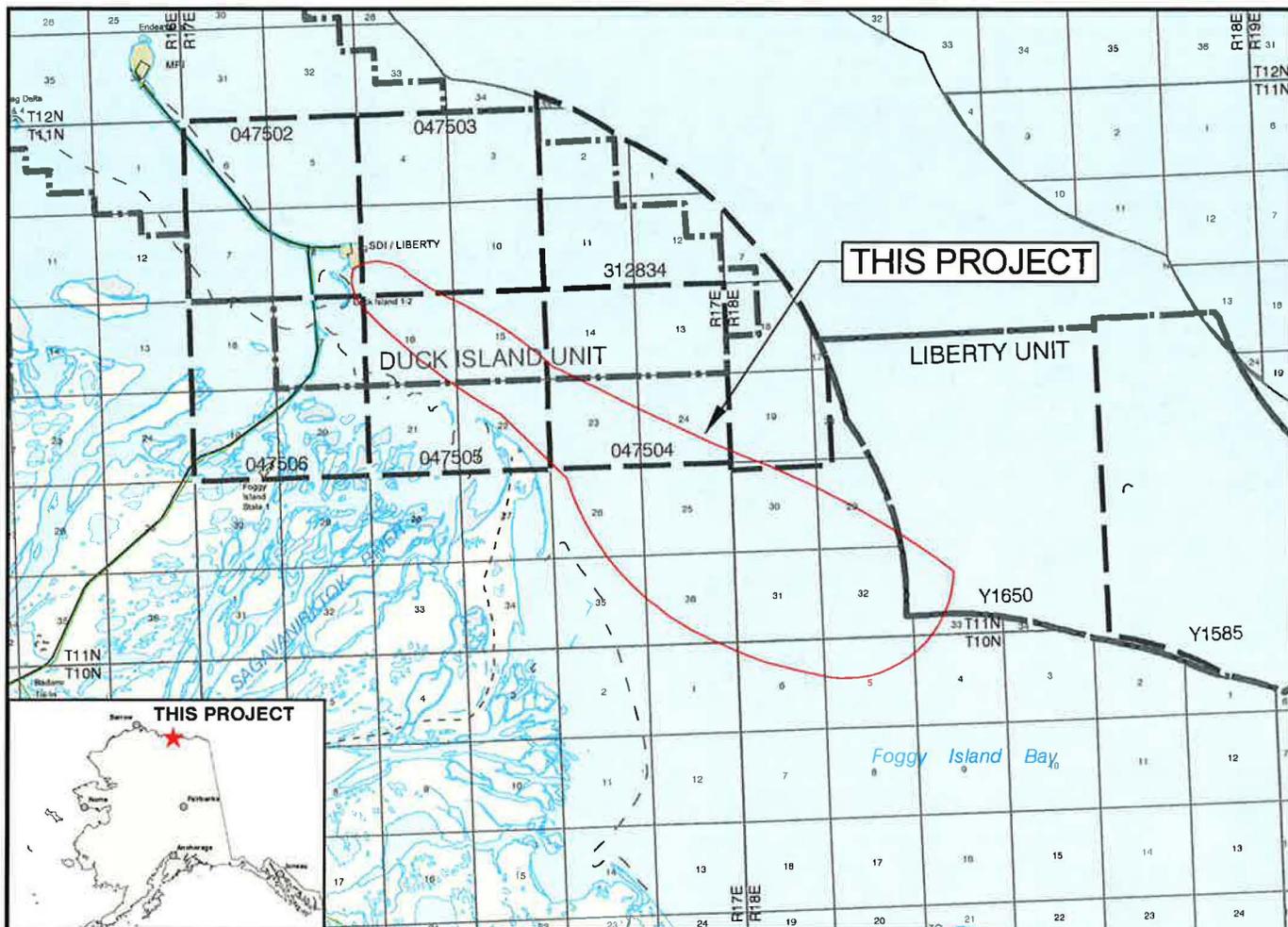
Holes of sufficient size to allow entry of the ROV will be drilled into the ice by the auger-equipped pumper. The ROV will be lowered into the ice hole and will search the seafloor to define its local characteristics (e.g. featureless or rock cover with observed concentrations of biota/kelp cover). The total number of sites examined will be a function of the productivity of the work crew, but could be up to 40 locations.

The project will be covered under a Letter of Authorization (LOA) from the U.S. Fish and Wildlife Service for conducting activities in Polar Bear habitat and appropriate mitigation efforts will be taken to avoid seal lairs and breathing holes. The BPXA Polar Bear and Wildlife Interaction Plans will be followed. Travel will be conducted to locations at depths greater than the 6 foot bathymetry. Where possible, a single off road travel route will be maintained for on ice travel to avoid impacts to possible seal lairs. Protected Species Observers (PSO's) will assist in establishing the travel route.

As provided in Dr. Richard Reanier's report Entitled "Cultural Resources in the Liberty Seismic Program Area, North Slope, Alaska" submitted to the State Historic Preservation Office March 17, 2008 for the Liberty Shallow Water Seismic Survey, there are no reported submerged sites (to include prehistoric and shipwrecks) within the Liberty Seismic Program Area. The area for the 2013 Winter Geotechnical & Seabottom Investigation is within a portion of the Liberty Seismic Program Area.

**3.0 Schedule**

The activities will begin April 1 and will conclude prior to breakup (May 2013).



This map is based on U.S.G.S quad Beechey Point (B-1, B-2) and on the Unit Operator's Facility Maps.



**PROJECT LOCATION:**

**DUCK ISLAND UNIT - SATELLITE DRILLING ISLAND**

**NAD83**

**LAT. = 70° 19' 18.786" / DD 70.321885**

**LONG. = -147° 51' 56.266" / DD -147.865629**

**ALASKA STATE PLANE ZONE 4, NAD83**

**X = 1,903,616.63 FEET**

**Y = 5,971,775.36 FEET**

**SEC. 1 T10N, R17E UMIAT M.**

**SEC. 4-6 T10N, R18E UMIAT M.**

**SEC. 8, 9, 14-17, 21-26, 35, 36 T10N, R18E UMIAT M.**

**SEC. 19, 29, 30-33 T11N, R18E UMIAT M.**

**ADL # 047502, 047503, 047504, 047505, 047506,  
312834**

**OCS # Y1650, Y1585**

**DATUM: MEAN SEA LEVEL**

**PURPOSE: GEOTECHNICAL INVESTIGATION**

**ADJACENT PROPERTY OWNER:  
STATE OF ALASKA**

**BP EXPLORATION (ALASKA) INC.**

**2013 FOGGY ISLAND BAY  
GEOTECHNICAL INVESTIGATION  
VICINITY MAP**

**DATE:  
February 2013**

**SCALE:  
1" = 2 Miles**

**FIGURE:  
1**

