



## **SHELL OFFSHORE INC.**

3601 C Street, Suite 1334  
Anchorage, AK 99503

# **Beaufort Sea Outer Continental Shelf Lease Exploration Plan 2007 - 2009**

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January 2007

Submitted to:

U.S. Department of the Interior  
Minerals Management Service  
Alaska OCS Region

Submitted by:

Shell Offshore Inc.



Shell Offshore Inc.  
3601 C Street, Suite 1334  
Anchorage, AK 99503

January 12, 2007

Regional Supervisor  
Minerals Management Service  
Office of Field Operations  
3801 Centerpoint Drive, Suite 500  
Anchorage, AK 99503-5820

SUBJECT: Exploration Plan  
OCS-Y 1805, Flaxman Island Block 6658  
OCS-Y 1807, Flaxman Island Block 6707  
OCS-Y 1808, Flaxman Island Block 6708  
OCS-Y 1809, Flaxman Island Block 6709  
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OCS-Y 1841, Barter Island Block 6801  
OCS-Y 1842, Barter Island Block 6802  
OCS-Y 1845, Barter Island Block 6962  
OCS-Y 1845, Barter Island Block 7117  
OCS-Y 1743, Harrison Bay Block 6222

In compliance with 30 CFR 250.211-228 giving Exploration Plan guidelines, Shell Offshore Inc. (SOI) requests your approval of this Exploration Plan which proposes to drill Well Locations as detailed in the attached plan. Drilling could commence as early as August 1, 2007.

This Plan consists of a series of attachments describing our intended operations. The attachments we desire to be exempted from disclosure under the Freedom of Information Act have been excluded from the Public Information Copies of this submittal. Confidential documents have been furnished to the Minerals Management Service (MMS) under a previous submittal.

In response to concerns expressed by MMS regarding bird strikes, SOI has committed to mitigating potential bird strikes with drilling facilities through the use of a U.S. Fish and Wildlife Service approved lighting configuration plan, including the use of strobe lights, where appropriate.

It is my understanding that MMS will be responsible for distribution of this document to the public, including state, federal and local agencies, the Alaska Eskimo Whaling Commission, and other interested parties who may have requested inclusion.

Should you require additional information, please contact me at 907-646-7112 or [susan.childs@shell.com](mailto:susan.childs@shell.com).

Kind regards,  
Shell Offshore Inc.

A handwritten signature in cursive script, reading "Susan Childs", is located below the typed name.

Susan Childs  
Regulatory Affairs Coordinator, Alaska

### Exploration Plan

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OCS-Y 1743, Harrison Bay Block 6222

## 1. PLAN CONTENTS

### (1b) Location

Lease block information is shown in the legend of each attached sketch and the correlation is in the lower right hand of each sketch.

### (1c) Rig Safety and Pollution Features:

The proposed rigs are the Frontier Discoverer an anchored drill ship with an 8-point anchored mooring system and the Kulluk, a semisubmersible with a 12-point anchored mooring system.

They will comply with all of the regulations of Det Norske Veritas (DNV), International Maritime Organization (IMO) and the United States Coast Guard (USCG). All drilling operations will be conducted under the provisions of 30 CFR, Part 250, Subpart D, and other applicable regulations and notices, including those regarding the avoidance of potential drilling hazards and safety and pollution prevention control. Such measures as inflow detection and well control, monitoring for loss of circulation and seepage loss, and casing design will be the primary safety measures. Primary pollution prevention measures are contaminated and non-contaminated drain system, mud drain system, and oily water processing.

### Additional Measures

The Central Control Console on the Kulluk is equipped with a central control panel that is used to monitor and control a number of Kulluk operations. The tank level, tank temperature, and draft section gives the operator an up to the minute status indication of all ballast and fuel tanks.

Service alarms from all over the Kulluk are tied to the unit service master alarm panel section of the Central Control Console. This allows the operator the ability to notify personnel responsible when an equipment alarm occurs.

There is also a section on the Control Console for emergency equipment stops and emergency shutoff valves on storage tanks.

The Tank Level and Temperature Indicators consists of 23 metritape L/T (Level/Temperature) and LS (Level Sensors) for tank level and temperature and draft measurement. Tank level and temperature values are displayed on individual analog meters. Level meters are located on the deck (by tanks) and in the control console, both are in meters. Temperature meters are located in the control console only and are in Celsius. Digital values for tank levels are selectively displayed on a digital panel located in the cover of the metric circuit enclosure (in data equipment room). Digital values for draft levels are displayed on individual digital meters located in the control console (readings are in meters). Level alarm contacts for specified tanks are located in the metric circuit enclosure. These contacts are used to light alarm lights on control console, near the associated tank level indicator.

**Attachment 1B Proposed Surface Locations & Bathymetry Exploration Plan**

This attachment contains confidential information and has been excluded from publicly distributed versions of the Exploration Plan.

**Attachment 1B Proposed Surface Locations & Bathymetry Exploration Plan**

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There are nineteen (19) tank level indicators on the central control console. There are eleven (11) temperature indicators associated with eleven of the nineteen tanks, and there are eleven high and/or low alarm lights associated with nine (9) tank levels.

The nineteen tank levels are:

- (3) Fuel Oil Tanks - 5S-11C, 5S-12C & 5P-10C.
- (7) Ballast Water Tanks - 5P-7C, 5P-4C, 5P-2C, 5S-2C, 5S-4C, 5S-7C & 5S-10C.
- (2) Drill Water Tanks - 5S-1C and 5P-1C.
- (2) Potable Water Tanks - #1 & #2.
- (3) KCL Brine Storage Tanks - #1, #2 & #3.
- (1) Waste Oil Tank.
- (1) Water Glycol Storage Tank.

The eleven temperature indicators are:

- (7) Ballast Waters - 5P-7C, 5P-4C, 5P-2C, 5S-2C, 5S-4C, 5S-7C, 5S-10C.
- (2) Drill Water Tanks - 5S-1C and 5P-1C.
- (2) Potable Water Tanks - #1 and #2.

The nine associated alarms are:

- (3) Fuel Oil Tanks - 5S-11C, 5S-12C & 5P-10C low level alarms
- (2) Potable Water Tanks - #1 & #2 - low level alarms.
- (2) Drill Water Tanks - 5S-1C & 5P-1C - high & low level alarms.
- (1) Water Glycol - low level alarm.
- (1) Waste Oil Tank - high level alarm.

The four draft gauges are:

- Forward
- Aft
- Port
- Starboard

Located on the bottom left side of the Central Control Console is a graphic display showing water lines, pumps and valves to all the ballast tanks. The ballast pumps (4) can be stopped or started by the stop/start switches located in the graphics. All the ballast valves may be opened or closed from the graphics, by pushing the desired open or closed push buttons. Each push button has an indicating light to show the valve status. By opening the correct valves and starting the correct pump, each ballast tank level may be raised or lowered. Located on both sides of the graphics are six meters. There are four pumps, three meters for each pump. The meters read suction pressure, discharge pressure, and flow for each pump.

The unit service master alarm panel is located in the top right portion of the console. The audible alarm buzzer, flicker stop and buzzer stop for the unit service alarms are located on bottom front of console.

The field devices located throughout the Kulluk to activate an alarm or run condition on the panel are contacts (opening or closing) on the equipment. Some of these devices are pressure switches, float switches, electrical relays, etc. Located on or by some equipment is a local alarm panel, which contains more than one alarm condition (example - high temperature, low oil pressure, etc.). There will be only one contact closure per panel sent to master alarm panel and will show up as unit alarm.

Located in the top centre of the console are eight (8) light indicating push button switches, labeled Emergency Equipment Stops. A common plastic door protects these push buttons so that they cannot be accidentally pushed. When a switch is depressed, it will illuminate the switch and shutdown the equipment in the room corresponding to the switch name plate.

#### Generator Room Name Plates

- Boiler Room
- Air Compressor Room
- Emergency Generator Room
- Incinerator Room
- FO Trans. Pump Room 5P-12C

#### Oil W. Surge Tank 10S-7B Waste Oil St. Tank 5S-7B

Located directly below the emergency equipment stops are seven indicating lights. They are illuminated when the emergency shutoff valves storage tanks are shut. They are labeled as follows:

- Generator Fuel Oil
- Boiler Fuel Oil
- Emergency Generator Fuel Oil
- Incinerator Fuel Oil
- Main Fuel Oil (5P-10, 11 & 5S-10C)
- Oily Water Surge
- Waste Oil Storage

Located inside, bottom front of console is an X-Y inclination detector. The detector sends a signal to a calculation unit. The calculation unit determines the angle of inclination and the X-Y coordinates (0-360°). The angle of inclination signal is then sent to the maximum inclination indicator, which displays the signal in degrees. The X-Y coordinate signal is sent to the direction of maximum inclination indicator, which is a light display. There are thirteen lights, twelve in a circle and one in the centre. If the rig is level, the centre one is lit. If off centre, the light will be lit in the direction in which the rig is tilted.

There are **STOP - START** push buttons on the console for saltwater service pump, winch cooling water pump and **OPEN - CLOSE** push buttons for saltwater inlet supply valve.

**(1d) Storage Tanks**

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil Tank Overflow	Discoverer	46.1	1	46.1	API = 27.5 SG = 0.890
Lube Oil Day Tank	Discoverer	65.7	1	65.7	Lube Oil
Dirty Oil Tank	Discoverer	317.6	1	317.6	
Fuel Oil Tanks No.1P No.1S No.2S	Discoverer	3,386.2 2,539.6 2,539.6	3	8,465.4	API = 27.5 SG = 0.890
Fuel Oil EM GEN F.O Day Tank	Discoverer	7.66	1	7.66	API = 27.5 SG = 0.890
Fuel Oil Fuel Oil Day Tank "A" Oil SVCE Tank "A" Oil SETT Tank "C" Oil SVCE Tank "C" Oil SETT Tank	Discoverer	166.7 44 31.4 75.5 94.3	5	411.9	API = 27.5 SG = 0.890
Lube Oil Lube Oil Day Tank Dirty LUB Oil Tank LUB Oil SETT Tank LUB Oil RESV Tank	Discoverer	15.0 15.0 50.3 50.3	4	130.6	Lube Oil
3x Fuel Oil Tanks	+5m level Kulluk Rig	4,225 1,555 4,255	3	10,035	API = 27.5 SG = 0.890
1x Fuel Oil Settling Tank	Kulluk Rig	90	1	90	API = 27.5
1x Fuel Oil Day Tank	Kulluk Rig	90	1	90	API = 27.5
1x Boiler Fuel Oil	Kulluk Rig	50	1	50	API = 27.5
1x Emergency Generator Fuel Oil	Kulluk Rig	30	1	30	API = 27.5

Type of Storage Tank (Cont.)	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
1x Incinerator Fuel Oil Tank	Kulluk Rig		1		API = 27.5
1x Waste Fuel Oil Transfer	Kulluk Rig	15	1	15	API = 27.5
7x Lubricating Oil Storage Tanks -- Engine Room -- Emer Gen Room -- Drill Floor -- Drill Floor -- Mud Pump Room -- Mud Pump Room -- Mud Pump Room	Kulluk Rig		7		Lube Oil
1x Water / Glycol Tank	+5m level Kulluk Rig	660	1	660	API = 10 SG = 1.0
4x Waste Oil Tanks -- Waste Oil -- Gen Waste Oil -- Tank Oil Water Surge -- Mud pump waste oil	+5m level Kulluk Rig	75 25 10	1		
1x Oily Water Surge Tank	Kulluk Rig	70	1	70	
1x Winch Brake Cooling Water Tank	Kulluk Rig	55	1	55	API = 10 SG = 1.0
1x Boiler Fuel Oil Tank	Main Deck / Upper Deck Kulluk Rig	50	1	50	API = 27.5 SG = 0.890
2x Helicopter Fueling Pods	Main Deck Kulluk Rig	15 15	2	30	

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## **2 GENERAL INFORMATION**

### **(2a) Application and Permits**

<b>Permits &amp; Authorizations</b>	<b>Agency</b>	<b>Submittal Date</b>
Application Permit to Drill	MMS	Spring 2007
Exploration Plan	MMS	8-Dec-06
Oil Spill Response Plan	MMS	11-Nov-06
Air Quality Permit - Kulluk	EPA	8-Dec-06
Air Quality Permit - Discoverer	EPA	8-Dec-06
NPDES General Permit AKG-28-000 - Kulluk	EPA	8-Dec-06
NPDES General Permit AKG-28-000 - Discoverer	EPA	8-Dec-06
MMPA IHA Application (Whales and Seals)	NMFS	8-Dec-06
MMPA LOA Application (Polar Bears & Pacific Walrus)	USFWS	8-Dec-06
USACE NWP 8 Oil and Gas Structures- Discoverer	USACE	8-Dec-06
Vessel Safety Zone	USCG	8-Dec-06
ACMP Consistency Review	ADNR	8-Dec-06
Conflict Avoidance Agreement	AEWC	Spring 2007

### **(2b) Drilling Fluids**

13,000-16,000 bbls/well of water based drilling fluid will be used.

### **(2c) New Or Unusual Technology**

None proposed.

**(2d) Bonding**

The bond requirement for the activities proposed in this EP are satisfied by an area-wide bond of \$1,000,000 furnished and maintained according to 30 CFR Part 256, subpart I, and National NTL No. 2003-N06, "Supplemental Bond Procures."

**(2e) Oil Spill Financial Responsibility (OSFR)**

Shell Offshore Inc (SOI), MMS Operator Number 0689, has demonstrated oil spill financial responsibility for the facilities proposed in the EP according to 30 CFR part 253.

**(2f) Suspension of Operations**

Leases are in effect until July 2015 within their primary term.

**(2g) Blowout Scenario**

See the enclosed Spill Response Plan, Section 2.3.

**(2i) Contact Information**

Susan Childs at phone number 907-646-7112, email [susan.childs@shell.com](mailto:susan.childs@shell.com), or fax 907-770-3636 or

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**3 GEOLOGICAL AND GEOPHYSICAL INFORMATION**  
**(Confidential)****(3a) Geological Description**

This attachment contains confidential information and has been excluded from publicly distributed versions of the Exploration Plan.

**(3b) Structure Contour Map(s)**

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**Attachment 3B SI 3 Depth Structure Exploration Plan**

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**Attachment 3B SI 7 Depth Structure Exploration Plan**

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**Attachment 3B SI 5 Depth Structure Exploration Plan**

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**Attachment 3B Top Eocene Depth Structure Exploration Plan**

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**Attachment 3B Top OL Objective Section Structure Exploration Plan**

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**Attachment 3B Top OL-1 Objective Section Structure Exploration Plan**

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**Attachment 3B Top OL-2 Objective Section Structure Exploration Plan**

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**(3c) Interpreted 2D and/or 3D Seismic line(s)**

See attached.

**(3d) Geological Structure Cross-section(s)**

See attached.

**(3e) Shallow Hazards Report, Assessment and High-resolution Seismic Lines & (3f) Shallow Hazards Assessment**

Copies of Geo LLC Exploration Well Site Clearance Assessments, dated November 8, 2006, for the Olympia and Sivulliq prospect locations proposed in this plan are included as Appendix A and B to this EP. They contain the seismic lines for the locations. Based on the preliminary analysis contained in this report, the sites appears suitable for the proposed exploration drilling activity.

This well site clearance report is based entirely on a review and compilation of existing data. Available information includes various geotechnical, high-resolution geophysical and geological data, and technical information in the public domain; discussions with recognized experts in the field of Arctic geologic and oceanographic science and engineering; proprietary data on file with Geo LLC; MMS guidance, reports and web-accessible information; and our specific past experience in the Beaufort Sea.

Data specific to the Olympia Prospect was obtained from a report on the "Erik Prospect" (OCS Y-0912) prepared by Dames & Moore (1985). A mudline cellar for the "Erik" well site was constructed, but an exploration well was never drilled at the site. The Erik studies included bathymetry, side-scan sonar and high-resolution subbottom profiling.

Data specific to the Sivulliq Prospect was obtained from reports on the "Hammerhead Prospect" (OCS Y-0849, Y-0850 and Y-0854) prepared by Nortec (1985). The "Hammerhead" studies included bathymetry, side-scan sonar and high-resolution subbottom profiling. Much of the discussion in this well clearance report is based on the 1984-85 studies for the Hammerhead Prospect, particularly the Nortec data report for Lease Blocks 624 and 625. These lease blocks (now numbered 6708 and 6709), overlap about 80 percent with the study area for the Sivulliq Prospect.

The Corona exploration well was drilled in 1985-86 and is the closest exploration well to the Olympia Prospect. The Corona extended to a depth of about 3,000 m and is located about 30 kilometers (km) west-northwest of the Olympia Prospect. The well log for Corona was examined briefly for relevance to the Olympia Prospect.

**(3h) & (3i) Stratigraphic Column with Time vs Depth Table**

See attached.

**(3j) Geochemical Information**

Prospect Hammerhead (OCS Y-0849, FI 6708)  
Preliminary Pre-Development Study March 1988  
Wells operated by Unocal.

**Attachment 3C 2-D Seismic Line 84-136-214**

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**Attachment 3C 2-D Seismic Line 78-WES-848**

This attachment contains confidential information and has been excluded from publicly distributed versions of the Exploration Plan.

**Attachment 3C 2-D Seismic Line 84-136-309**

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**Attachment 3D 2-D Seismic Line 78-WES-848 Geologic Cross Section**

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**Attachment 3D 2-D Seismic Line 84-136-309 Geologic Cross Section**

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**Attachment 3D 2-D Seismic Line 84-136-214 Geologic Cross Section**

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**Attachment 3H, I Stratigraphic Column & Time/Depth Table**

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**(3k) Future G&G Activities**

Pending environmental conditions, a program of bathymetric surveys, shallow hazard work and geotechnical borings will be scheduled in order to augment development and appraisal planning at the location. Currently, SOI plans to acquire 3-D seismic data during the next three open water seasons (2007-2009). Supplemental appraisal and development well locations may be refined depending upon our ability to acquire these data. Individual G&G or Ancillary permits will be submitted to cover the proposed work.

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## **4 HYDROGEN SULFIDE**

### **(4a) Concentration**

None.

### **(4b) Classification**

SOI records indicate that hydrocarbon samples were collected from the Oligocene objective section in the Hammerhead #s 1, 2 wells drilled by Unocal *et al.* in 1985 and 1986, respectively (Flaxman Island 6708 OCS-Y 1808). No evidence of hydrogen sulfide was observed in fluid samples from either well. Additionally, based on scout ticket information, final well reports and publicly-available reservoir engineering data, none of these nearby wells encountered H<sub>2</sub>S, including those that penetrated the age equivalent older sections below 8,000 ft TVD and the age equivalent section in five of the following wells:

1 OCS Y-0917 (BELCHER) 55141000050000\*  
 1 OCS Y-0943 (AURORA) 55141000040000\*  
 1 POINT THOMSON 50089200050000\*  
 2 POINT THOMSON 50089200060000\*  
 3 POINT THOMSON 50089200070000\*  
 1 OCS-Y-1597 (WILD WEASEL) 55171000110000  
 1 OCS-Y-1663 (WARTHOG) 55171000120000  
 1 OCS-Y-0866 (KUVLUM) 55171000080000  
 1 OCS Y-0871 (CORONA) 55171000020000  
 1 OCS Y-1092 (GALAHAD) 55171000070000  
 1 OCS-Y-1578 (MCCOVEY) 55201000100000

\* = Penetrated age equivalent formations similar to our proposed targets

SOI requests that the Regional Supervisor, Field Operations, classify the objective zones in these proposed drilling operations as residing in an area where H<sub>2</sub>S is absent.

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## **5 BIOLOGICAL, PHYSICAL, AND SOCIOECONOMIC INFORMATION**

### **5.1 Historical Shipwrecks**

A review was made of MMS' web site regarding the locations of historical shipwrecks that may be present on the seafloor in the vicinity of the Prospects. Several shipwrecks are noted in the general area. However, most are nearshore wrecks or the locations are not known with certainty. No specific shipwrecks are known in the vicinity of the proposed wells in the Sivulliq and Olympia Prospects. Shipwrecks or other historic artifacts were not observed or reported during the evaluation of side scan sonar data presently available for the Prospects.

### **5.2 Prehistoric Archeological Potential**

Water depths for the Sivulliq and Olympia Prospects range from about 31 to 35 meters. During the last major regression in sea level during the last ice age, approximately 18,000 years ago, the sea level was approximately 90 meters below present elevation. Recent research in the Bering Sea suggests that sea levels were about 50 meters lower than present approximately 11,000 years ago. All of the proposed well locations in the Prospects would have been inundated by marine waters approximately 7,500 years ago. Early humans in North America could have traversed presently inundated areas within the Prospect well locations up until about 7,500 years ago. It is also possible that prehistoric archeological materials could have existed at suitable habitation sites within the study area. Candidate sites would be former subaerially elevated areas adjacent to stream channels, or shoals and barrier islands that were exposed as land masses when sea levels were lower than present. Potential buried channels with nearby areas of subtle elevated relief are interpreted to exist within the Prospects. Early humans could have left behind artifacts at localized habitation sites in the proposed exploration well areas before sea level rose and flooded the Beaufort Shelf area.

The entire Prospect area is located within water depths that are subject to extensive ice gouging of the seafloor. Past sidescan sonar studies document many intersecting and overlapping ice scour lines. Former subaerially elevated land areas most suitable for human habitation (shoals, barrier islands, high terraces adjacent to stream channels, etc.) would be the landforms most susceptible to disturbance from ice thrusting and ice gouging after inundation by rising sea levels. Even if prehistoric habitation sites and artifacts may once have existed in the proposed exploration well sites, they have almost certainly been destroyed by repeated ice scour events over the last 7,500 years. Therefore, it can be concluded that the potential for encountering or damaging prehistoric archeological resources by drilling activities at the proposed well sites is remote.

Section 16 of this EP, found in Appendix G, the Environmental Report includes a brief discussion of present subaerial cultural resources in Section 3.10.

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## 6 SOLID & LIQUID WASTE AND DISCHARGE INFORMATION

The following two tables contain information on the generation and disposal of solid and liquid wastes generated during the course of the project execution. The wastes are generated at both drilling units and all of the ice management vessels. Amounts shown are for totals for the project.

### (6a) Projected Generated Wastes

The following table shows the generated waste streams and disposal methods for a full-scale operation. The values were derived from empirical information and from past experiences. Actual generation rates may be less at the start and finish of the drilling season.

Type of Waste	Composition	Projected Amount	Describe how it will it be treated, stored, or downhole disposed of at your facility
Spent Drilling Fluids	Water based drilling fluid	3,000 bbls / well	Discharged to water through disposal caisson
Cuttings from water based intervals	Cuttings coated with water based drilling muds	4,425 bbls / well	Discharged to water through disposal caisson
Sanitary Waste	Treated human body waste from toilets	56 bbls / day	Sanitary waste to be discharged to water through disposal caisson
Domestic Waste	Gray water (laundry, galley, lavatory)	72 bbls / day	Based on 108 personnel @ 26 > 28 gal / person / day
Excess cement	Cement slurry	50 bbls / well	Discharged to water through disposal caisson
Desalination Unit Brine Water	Rejected water from watermaker unit	125 bbls / day	Discharged to water through disposal caisson
Deck Drainage	Uncontaminated fresh or seawater	5 bbls / day	Drains to oily water separator. Uncontaminated water discharged through disposal caisson. Contaminated water stored in waste oil tank
Trash and Debris	Refuge generated during installation and production	300 bbls / month	Trash and debris to be segregated and disposed of at a approved disposal facility
Cooling Water	Treated Seawater	45,000 bbls / day	Discharged to water through disposal caisson
Firewater	Treated Seawater	0 bbls / month	No discharge of firewater unless needed for fire
Ballast Water	Uncontaminated Seawater	620 bbls / day	Discharged to water through disposal caisson
Used Oil	Lube Oil	100 bbls / year	Stored onboard in waste oil tank. Transferred to lube cubes for transport by

			boat. Transfer to approved disposal site
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### **(6b) Projected Ocean Discharges**

The following table shows the generated waste streams and disposal at sea for a full-scale operation. The values were derived from empirical information and from past experiences. Actual generation rates may be less at the start and finish of the drilling season. All discharges will be as per the requirements of the General NPDES permit, latest approved version, subject to all testing described therein.

<b>Type of Waste</b>	<b>Total Amount to be Discharged*</b>	<b>Discharge Rate</b>	<b>Discharge Method</b>
Water-based Mud	3,000 bbls/well (When multiple wells drilled in same season, same WBM system will be transferred to next well)	3,000 bbls / well*	Overboard and seafloor discharge prior to marine riser installation
Drill Cuttings From Water Base Drilling Interval	4425 bbls / well	25 bbls / hr	Sea bed through riserless drilling and discharged through disposal caisson
Excess Cement	100 bbls / year	50 bbls / well	Discharged at seafloor during 30" & 20" cement ops
Cooling Water	2,700,000 bbls / year	45,000 bbls / day	Discharged through disposal caisson below water's surface
Sanitary Waste	5,000 bbls / year	56 bbls / day	Treated in the marine sanitary device prior to discharge to meet NPDES limits
Domestic Waste	4,010 bbls / year	26 > 28 gal / person / day	Domestic waste discharge will be treated and discharged in the same manner as sanitary wastes.
Desalination Unit Brine Water	7,500 bbls / year	125 bbls / day	Discharged through disposal caisson below water's surface
Deck Drainage	300 bbls / year	5 bbls / day (dependent on rainfall)	Discharged through disposal caisson below water's surface
Ballast Water	37,200 bbls / year	620 bbls / day	Discharged through disposal caisson below water's surface
Firewater Bypass	0 bbls	0 bbls / month	Discharged through disposal caisson below water's surface

### **(6c) NPDES Permit**

SOI has applied for coverage under the General Permit for Offshore Oil and Gas Operations on the OCS and Contiguous State Waters of Alaska (AKG-284-0000), which became effective June 26, 2006 and expires midnight June 26, 2011. SOI's Notice of Intent (NOI) is provided as Appendix C.

**(6d) Cooling Water Intake**

The saltwater Service System supplies all the vessel's needs for salt water, including drilling operations. The system primarily is used to supply cooling water to equipment heat exchangers.

It consists of: two saltwater pumps Aurora 5-483-11C, one flare burner spray pump, two sea suction, each with duplex strainer, and associated distribution piping.

The saltwater service system consists of one service pump 85 liters/second at 552 kPa (22.5 US gallons at 80 psi) in each pump room taking suction from a sea chest located at 0.0m elevation via a duplex strainer (common to fire water systems). Each pump discharges independently to the system distribution loop under the main deck. The system is designed to operate with one pump running continuously and the other on standby. The pumps are powered from EMCC No. 1 and are controlled from the control room or by local control.

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OCS-Y 1809, Flaxman Island Block 6709  
OCS-Y 1817, Flaxman Island Block 6765  
OCS-Y 1828, Flaxman Island Block 6824  
OCS-Y 1834, Flaxman Island Block 6874  
OCS-Y 1841, Barter Island Block 6801  
OCS-Y 1842, Barter Island Block 6802  
OCS-Y 1845, Barter Island Block 6962  
OCS-Y 1845, Barter Island Block 7117  
OCS-Y 1743, Harrison Bay Block 6222

## **7 AIR EMISSIONS INFORMATION**

SOI will apply to the Environmental Protection Agency, Region 10, for a minor new source review (NSR) permit based on the Alaska Department of Environmental Conservation's air quality standards by December 15, 2006. SOI will provide a copy of the permit application to MMS when submitted to the EPA (Appendix D). The application will be based on EPA Dispersion Modeling protocol.

### Exploration Plan

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## **8 OIL SPILLS INFORMATION**

SOI's Oil Discharge Prevention and Contingency Plan (ODPCP) for Beaufort Sea open water drilling program is included as Appendix E to this EP – Beaufort Sea Regional Exploration Oil Discharge Prevention and Contingency Plan, November 2006). The plan provides information on oil spill prevention detection and control procedures, response organization, risk analysis, and environmental sensitivity. It is designed to assist SOI and contractor personnel in responding rapidly and effectively to oil spills that may result from exploratory drilling operations.

The ODPCP provides a detailed description of appropriate actions and techniques for various spill circumstances, response times for mobilization of personnel and equipment from various locations, equipment operating characteristics, and the availability of equipment both on site and off site. This plan emphasizes the prevention of oil pollution by employing the best control mechanisms for blowout prevention and fuel transfer, and by implementing a mandatory program of personnel training. MMS Regulations (30 CFR 254) include specific requirements for oil spill and pollution prevention. The ODPCP includes a cross-reference to these for review of the applicability and compliance with these regulations.

All project personnel, including employees and contractors, will be involved in oil spill contingency response and will receive training as described in the ODPCP. Training drills will be conducted periodically to familiarize personnel with on-site equipment, proper deployment techniques, and maintenance procedures.

### Exploration Plan

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## **9 ALASKA PLANNING INFORMATION**

### **(9a) Emergency Plan**

See enclosed Beaufort Sea Regional Exploration ODPCP specifically sections:

- Section 1.0 – Response Action Plan
- Section 1.1 – Emergency Action Checklist
- Section 1.2 – Reporting and Notification
- Section 1.3 – Safety
- Section 1.4 – Communications
- Section 1.5 – Deployment Strategies
- Section 1.6 – Response Strategies
- Section 1.7 – Non-mechanical Response Options
- Section 2.0 – Prevention Plan
- Section 2.1 – Prevention Inspection & Maintenance Program
- Section 3.1.2 – Bulk Storage Containers
- Section 3.3 – Command System
- Section 4.0 – Best Available Technology

### **(9b) Critical Operations and Curtailment Procedures**

SOI will provide a well specific Critical Operations and Curtailment Procedures (COCP) with each Application for Permit to Drill.

The Critical Operations and Curtailment Plan (COCP) outline has been prepared to accompany the SOI Plan of Exploration for the Sivulliq Prospects; Beaufort Sea, Alaska. This plan addresses the methods by which SOI will cease, limit, or not initiate specific critical operations due to environmental conditions that may be encountered at the exploratory drillsite.

The most probable factors that could result in the curtailment of critical operations while drilling the Beaufort Sea are heavy weather, sea ice, and structural icing.

When any circumstance or condition that is described in this plan occurs, or any operational limits are reached, SOI will advise the MMS District Supervisor and operations will be curtailed in conformity with this COCP.

The person in charge of the overall drilling operation is:

Shell Offshore Inc.  
Alaska Well Delivery Unit Manager

A detailed discussion of the availability and capability of containment and cleanup equipment as well as spill control response times is found in the Oil Spill Contingency Plan which has previously been submitted. A complete COCP will be made available to MMS when the COCP is completed.

### **2007 COCP Outline Summary:**

The objective of this Critical Operations Curtailment Plan is to provide brief, direct, concise and clear guidance regarding realistic events and anticipated / planned responses. The current outline for the Critical Operations Curtailment Plan is as follows:

#### **Introduction:**

- Site specific for the area of operation (OCS-Y leases)
- Brief operational overview and historical reference
- Intent and scope of COCP
- Scope of operation, identification of vessel types and support logistics

#### **Identification / description of curtailment / suspended operations:**

- Identify and define the categories / situations
  - weather
  - sea ice
  - ice accumulation on vessel
  - operational limitations or compromises
  - mitigating steps to maintain well control
- Qualify the levels of intensity and significance of the above categories / situations
- Define the parameters and levels of anticipated / planned response

#### **Review of the operational curtailment sequence and applicable contingencies:**

- List by bullets in brief sequential cause / effect and proper response
- Reference attachments or established procedures / methods (i.e. Kulluk operations manual)

#### **Process and protocol of decision to curtail operations:**

- Roles and responsibilities
- Levels of interaction and inter-relationships
- Identify network of external and internal communications
- Decision process, checks and balances, protocol of final decision
- Incident command and coordination process when applicable

**Ice management operations and protocol:**

- Key participants and inter-relationships
- Monitoring, recording, reporting and analyzing data
- Decision and coordination process

**Attachments, appendices and references:**

- Attach: description of ice monitoring and alert procedures
- Reference: operation manual regarding detailed curtailment procedures
- Attach: relief well plan and strategy

### Exploration Plan

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## **10 ENVIRONMENTAL MONITORING INFORMATION**

### **(10a) Monitoring Systems**

The Discoverer will be equipped with the following monitoring equipment:

Radar:	Furuno Model FAR2837S
Satellite	Navigation receiver: Simrad GN33 GPS Navigator
Gyro Comapass:	Simrad GC 80
Magnetic Compass:	C&P Standard Reflecta 3
Echo Sounder, fathometer:	Furuno FE-700
Roll and Pitch Monitors:	Inclinometers
Anemometer:	Observator OMC-160
Meteorological Thermometer:	Observator OMC-406
Meteorological barometer:	Observator OMC-506

The Kulluk will be equipped with the following monitoring equipment:

VSAT  
 Radars  
 X Band  
 S Band  
 Gyro Compass  
 Depth Sounder  
 Acoustic Positioning System  
 Anchor Tension Temperature & Depth Recorder

An acoustic relocation system may be deployed on the sea floor that will aid in re-entering the well should the drilling operations be suspended for any reason. If deployed, the system will be surface activated for the short duration required to locate the well site. The use of GPS may replace the entire system thus removing this noise source. Due to the high latitude the GPS may have difficulty in locating the well to within acceptable limits. Then the acoustic system would have to be employed.

The system consists of a group of sound transponders located in a predetermined array on the sea floor. This array is then referenced to the well bore for future use, only if required. To relocate the well the transponders are activated and the location of the well is determined from the data. Then the sound sources are deactivated and fall silent until required again. It is envisioned that should the acoustic system be required it would be activated only several times during the course of the drilling operation.

The thrusters are used for controlling the heading of the vessel to keep the bow square into the ice movement direction. The vessel will be anchored to the bottom for the proposed wells for the 2007 season. The thrusters will be used for large vessel directional changes aided by the turret hydraulic rams for the more minor adjustments to keep the vessel headed into the ice flow direction. The noise signature information of these thrusters will be updated with data collected during the season 2007 drilling season There is one (1) thruster in the bow of the vessel and one (1) in the stern of the vessel.

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## **11 LEASE STIPULATIONS INFORMATION**

### **(11a) Protection of Biological Resources**

Stipulation No. 1. Protection of Biological Resources. If biological populations or habitats that may require additional protection are identified in the lease area by the Regional Supervisor, Field Operations (RS/FO), the RS/FO may require the lessee to conduct biological surveys to determine the extent and composition of such biological populations or habitats. The RS/FO shall give written notification to the lessee of the RS/FO's decision to require such surveys.

SOI Actions: Previous marine surveys for well site clearance on federal OCS acreage and site specific shallow hazard work at the Sivulliq (formerly Hammerhead) and Olympia (formerly Erik) locations during 1984 and 1985 and reported in 1985 have not identified any hard bottom (i.e. "boulder patch" areas) communities. Hard-bottom communities have high species diversity and provide valuable habitat for fish and invertebrates. SOI, during August-September 2006, as required by 30 CFR 250.33 (b)(1)(ix), attempted shallow hazard survey activities including detailed bathymetry, subbottom profilers, and side-scan sonar work. Due to prevailing ice conditions, SOI was unsuccessful conducting these surveys. SOI has been reliant on the data from the mid-1980s site clearance reports. The mid-1980 surveys did not identify any special benthic communities in the areas proposed for drilling during 2007. To date, no confirmed Boulder Patch type of habitat has been identified at the SOI offshore drilling locations. The area does contain benthic organisms living within the substrate and on or near the bottom surface sediments. Updated interpretations (GEO LLC 2006) of these surveys will be submitted to the RS/FO as soon as data is compiled and interpreted in Early 2007.

### **(11b) Orientation Program**

Stipulation No. 2. Orientation Program. The lessee shall include in any exploration or development and production plans submitted under 30 CFR 250.203 and 250.204 a proposed orientation program for all personnel involved in exploration or development and production activities (including personnel of the lessee's agents, contractors, and subcontractors) for review and approval by the RS/FO. The program shall be designed in sufficient detail to inform individuals working on the project of specific types of environmental, social, and cultural concerns that relate to the sale and adjacent areas. The program shall address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals and provide guidance on how to avoid disturbance. This guidance will include the production and distribution of information cards on endangered and/or threatened species in the sale area. The program shall be designed to increase the sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which such personnel will be operating. The orientation program shall also include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.

SOI Actions: All SOI and contractor personnel will receive North Slope cultural awareness training, and specific training in environmental awareness and safety, including polar bear avoidance. Cultural Orientation, Predator and Waste Management, and Polar Bear awareness programs have been developed for this project, and are attached as Appendix F. For the drilling program, a polar bear interaction plan and request for a letter of authorization will be submitted to the USF&WS and an Incidental Harassment Authorization (IHA) application will be submitted to NOAA Fisheries. Each of these authorizations will mandate awareness training for all personnel involved in drilling program activities.

### **(11c) Transportation of Hydrocarbons**

Not applicable to Exploration Plan. No production proposed.

### **(11d) Industry Site-Specific Bowhead Whale-Monitoring Program**

Stipulation No. 4. Industry Site-Specific Bowhead Whale-Monitoring Program. Lessees proposing to conduct exploratory drilling operations, including seismic surveys, during the bowhead whale migration will be required to conduct a site-specific monitoring program approved by the RS/FO; unless, based on the size, timing, duration, and scope of the proposed operations, the RS/FO, in consultation with the North Slope Borough (NSB) and the Alaska Eskimo Whaling Commission (AEWC), determine that a monitoring program is not necessary. The RS/FO will provide the NSB, AEWC, and the State of Alaska a minimum of 30 but no longer than 60 calendar days to review and comment on a proposed monitoring program prior to approval. The monitoring program must be approved each year before exploratory drilling operations can be commenced.

SOI Actions: SOI will submit to the MMS a site-specific bowhead whale-monitoring program 60 days prior to the National Marine Fisheries Service 2007 Open Water Meeting traditionally scheduled for late April. SOI will be an active participant in the 2007 Open Water Meeting and funding participant to the independent review of the monitoring plan and reports generated following 2007 activities. SOI is seeking an IHA for incidental take from the NOAA Fisheries, and assumes that the monitoring program and review process required under the IHA will satisfy the requirements of this stipulation. SOI intends to use local contractors, who will, in turn provide local hiring opportunities, including recruitment and training of, subsistence advisors and marine mammal observers. A summary of key components of the program follows.

#### **Marine Mammal Observers (MMO)**

The presence of MMOs on all vessels will, as usual, be at the heart of the 4MP. These observers will be responsible for collecting basic data on observations of marine mammals (MMs) and for implementing mitigation measures including vessel avoidance measures and operational shutdown. The observations made by MMOs serve as the primary basis for estimation of impacts to MMs. As their ranks also include representatives of the native community, the MMOs also serve as an important means of providing local hire and local oversight of the monitoring program.

MMOs will be required in support of all operations both in the Beaufort and the Chukchi. For seismic operations a minimum of four MMOs will be required for the source vessel. Three to four MMOs will be required for the support vessel. At least two additional MMOs will be required for service vessels (e.g. crew change, fuel ferrying, provisioning).

In support of drilling, the drill ships themselves will require two to three MMOs to be available to make MM observations and advise on mitigative measures. Ice management vessels will require two to three

MMOs to make observations when these vessels are performing support activities and while they are in or near the ice pack.

All support vessels that perform transit or intermittent activities will require one to two MMOs.

The total MMO needs will fluctuate during the season as activities increase and decrease. The greatest demand for MMOs will be during September and October and will peak at approximately 60 MMOs needed simultaneously.

### **Manned Aerial Program**

Aerial surveys are one of the key methods for collecting broad area information regarding the distribution and abundance of MMs across the project theater, for investigating distribution and behavior patterns relative to operations (i.e. investigation of deflection and habitat abandonment), and for investigating behavioral reactions to operations. Key investigative issues to document during 2007 will be increased understanding of deflection phenomena including the distance/sound levels at which deflection/abandonment occur and the persistence of deflection/abandonment.

Currently three independent aerial programs may be proposed in support of:

Beaufort drilling (mid July through end of October) – surveys centered on the drilling activities and extended east and west to detect point of earliest deflection and persistence of deflection. Pattern of survey will be N/S transect lines spaced to cover the majority of the area. Since the drilling activities are anticipated to be in close proximity to one another, one survey operation will cover the entire drilling program.

Beaufort seismic (September first to mid-October) - surveys centered on the seismic activities and extended east and west to detect point of earliest deflection and persistence of deflection. Pattern of survey will be N/S transect lines spaced to cover the majority of the area.

Chukchi seismic (Mid July to end of October) – There is some question as to whether SOI or other operators will conduct seismic in the Chukchi in 2007. Currently anticipated aerial operations would be a repetition of shoreline/nearshore surveys twice weekly from Barrow south. Additional surveys in the vicinity of Barrow may be added during the migration. A Chukchi aerial program would likely be a shared program with other operators.

Aerial operations will also provide support in the form of ice observations.

### **Drone Aerial Program**

An initial unmanned aerial survey (UAS) is proposed for the 2007 season. It is not likely that a drone program would either replace or significantly reduce the anticipated manned aerial programs. A UAS program could, however, augment the manned aerial programs and offer opportunities to collect more wide ranging data collection in the Chukchi in lieu of the vessel based surveys conducted in 2006.

A second goal of a UAS program in 2007 would be to further develop the evaluation of this technology as a tool for monitoring MM populations and movements. Building on experiments conducted during 2006, UAS flights would be coordinated with manned flights to If drones are used to augment Beaufort drilling and seismic aerial surveys one goal would be to provide justification for moving away from manned

aerial programs. A greater driver, however, would be the development of a more robust database. MMOs on board support vessels and drill rigs would be able to provide double duty.

### **Acoustic recorders**

A combination of acoustic recorder technology will be employed to document wide area distribution of MMs, document distribution of MMs in relation to activities, to add clarity to sound levels, character, and propagation, and to document presence of MMs in hunting areas.

Beaufort –four to five arrays of pop ups or DASAR buoys are anticipated across the Beaufort. Array locations are anticipated to be off Kaktovik, 15 miles east of Sivuluq, 15 miles west of Sivuluq, 30 miles west of Cross Island, and at Barrow. Each array will utilize 6-10 recording devices.

Chukchi –it is anticipated that the '06 popup program would be repeated. An alternative to this might be a more widespread net of popups or the use of larger recorder technology would be anticipated.

### **Sound Modelling**

Sound modeling will be required for major activities, i.e. seismic in both Chukchi and Beaufort and drilling.

### **Sound Source Verification**

Field measurement sound propagation profiles of all vessels and drill rigs will be conducted.

### **Additional Studies**

SOI will participate in additional studies of marine resources in an effort to gain understanding of baseline conditions and distribution of critical resources, to gain an understanding of interactions between industry activities and marine resources, and to contribute to the understanding of resource status and conservation/management needs. The list of potential studies and monitoring projects includes:

- Walrus distribution and habitat use in Chukchi
- Offshore bird (eider) distribution and use of project areas in Beaufort
- Benthic biota survey
- Polar Bear distribution and abundance in Chukchi
- Pinniped distribution and reaction to activities
- Beluga whale distribution and migratory patterns
- Participation in bowhead tagging study
- Analysis of subsistence harvest data with respect to industry activities supplemented by traditional knowledge compilation and analysis.

## **11e) Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence-Harvesting Activities**

Stipulation No. 5. Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence-Harvesting Activities. Exploration and development and production operations shall be conducted in a manner that prevents unreasonable conflicts between the oil and gas industry and subsistence activities (including, but not limited to, bowhead whale subsistence hunting). Prior to submitting an exploration plan or development and production plan (including associated oil-spill

contingency plans) to MMS for activities proposed during the bowhead whale migration period, the lessee shall consult with the directly affected subsistence communities, Barrow, Kaktovik, or Nuiqsut, the NSB, and the AEWC to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. Through this consultation, the lessee shall make every reasonable effort, including such mechanisms as a conflict avoidance agreement, to assure that exploration, development, and production activities are compatible with whaling and other subsistence hunting activities and will not result in unreasonable interference with subsistence harvests.

SOI Actions: SOI's consultation, coordination, and resulting agreements and/or permits with the Native entities of the North Slope for its 2006 activities has provided a springboard for consultations regarding proposed 2007 activities. Starting in October and November 2006, SOI continued its North Slope stakeholder outreach, in part discussing plans for 2007 with the potentially affected villages of the North Slope; Barrow, Nuiqsut, Kaktovik, the NSB, and AEWC. These discussions were at multiple levels and occurred in person, in writing or telephonically.

Discussions with the AEWC in December 2006 resulted in general consensus regarding a draft timeline for negotiation of the 2007 Conflict Avoidance Agreements specifically for SOI, and those potentially including other operators but represented by SOI as the Industry CAA Operator. SOI's role as Industry CAA Operator, as it was in 2006 and if it is requested by AEWC for 2007, will help prevent potential conflicts from combined operators' activities. These discussions have been shared with the NSB, including their Planning and Wildlife Departments. The NSB Wildlife Department is in consultation with SOI regarding its Marine Mammal Monitoring Plan design. NOAA Fisheries, the AEWC, and the NSB have been coordinated with regarding Incidental Harassment Authorizations, and a draft schedule for developing Plans of Cooperation with the potentially affected villages has been established with the AEWC.

SOI has been diligent to attempt to involve the Native leadership structure in each village including the Whaling Captains Association, Native Village Corporations, city governments, and other local leadership foci. This local stakeholder engagement in addition to the above noted consultation and coordination has allowed SOI to design a draft Mitigation Plan that will be shared externally in the first quarter 2007. SOI has also engaged itself with the Arctic Slope Regional Corporation regarding regional issues and conflict avoidance. SOI is actively seeking to establish strong local content in its services offerings. A summary of stakeholder engagement activities conducted by SOI may be found in Appendix J.

SOI will provide the MMS a final version of the 2007 CAA prior to the National Marine Fisheries Service (NMFS) 2007 Open Water Meeting traditionally scheduled for late April. The CAA will ultimately be between the all Industry Participants, including SOI, and the following whaling organizations:

- Alaska Eskimo Whaling Commission;
- The Whaling Captains' Association of the Village of Barrow;
- The Nuiqsut Whaling Captains' Association; and
- The Kaktovik Whaling Captains' Association.

SOI will notify the RS/FO of all concerns expressed by subsistence hunters during operations and of mitigation measures, and avoidance steps taken to address such concerns.

### **(11f) Pre-Booming Requirements for Fuel Transfers**

Stipulation No. 6 - Pre-Booming Requirements for Fuel Transfers. Fuel transfers (excluding gasoline transfers) of 100 barrels or more occurring 3 weeks prior to or during the bowhead whale migration will require pre-booming of the fuel barge(s). The fuel barge must be surrounded by an oil-spill-containment boom during the entire transfer operation to help reduce any adverse effects from a fuel spill. This stipulation is applicable to the blocks and migration times listed in the stipulation on Industry Site-Specific Bowhead Whale-Monitoring. The lessee's oil-spill-contingency plans must include procedures for the pre-transfer booming of the fuel barge(s).

SOI Actions: **The vessels performing fuel transfers to the Kulluk and/or Discovered Rigs will have pre-booming as part of their Vessel Response Plan in accordance with this stipulation.**

### **(11g) Lighting of Lease Structures to Minimize Effects to Spectacled and Steller's Eider**

Stipulation No. 7. Lighting of Lease Structures to Minimize Effects to Spectacled and Steller's Eider. In accordance with the Biological Opinion for the Beaufort Sea Lease Sale 186 issued by the U.S. Fish and Wildlife Service (USFWS) on October 22, 2002, and USFWS's subsequent amendment of the Incidental Take Statement on September 21, 2004, lessees must adhere to lighting requirements for all exploration or delineation structures so as to minimize the likelihood that migrating spectacled or Steller's eiders will strike these structures. Lessees are required to implement lighting requirements aimed at minimizing the radiation of light outward from exploration/delineation structures to minimize the likelihood that spectacled or Steller's eiders will strike those structures. These requirements establish a coordinated process for a performance based objective rather than pre-determined prescriptive requirements. The performance based objective is to minimize the radiation of light outward from exploration/delineation structures.

#### **SOI Actions: Prospective Drilling Rig Lighting Plan**

SOI discussed the proposed plan in a meeting with the MMS and the USFWS on January 11, 2007. The approach developed is intended to be applicable to the Kulluk and Discoverer. The plan must provide sufficient lighting to enable work to be accomplished safely while minimizing superfluous light emissions that may disturb the environment outside the Kulluk and Discoverer or attract wildlife to them. Since much of the open water-drilling season is during 24-hour daylight, the necessity for exterior drill rig lighting intensity will be minimized during July and August, but will increase during September through October.

When seasonally necessary, the minimum level of lighting will illuminate the entire working surface of the drill site locations. Areas of high usage such as the walkways or material storage areas will have a higher level of illumination. Lighting will be predominantly mounted on existing structures; however, high mast cut-off luminaries will also be used.

The proposed drill site locations are within the range of the threatened Spectacled and Steller's eiders. Spectacled eiders and the Alaska breeding population of Steller's eiders were listed as threatened under the Endangered Species Act of 1973, as amended in 1994 and 1997, respectively. Since radiant lights at facilities could be an attractant to birds, especially during periods of inclement weather and/or increasing darkness, shielded lighting will be used on the Kulluk and Discoverer, and ice management vessels to lessen the potential for episodic collision events.

SOI is committed to instituting design modification by using low radiant lighting that could mitigate the potential for bird strikes to production facilities during the east-west movements in spring and fall.

General lighting will be via high-pressure sodium high mast cut-off luminaries, or similar tuned to ensure sufficient illumination over the required areas. Lighting will be directed inward toward the drilling site where ever possible to prevent “star” affects when viewed offsite. Light shields and Type II, III, but mostly Type IV luminaries will be placed on perimeter lighting to dampen superfluous light from leaving the drilling locations.

Drilling locations are expected to appear as a small glow on the horizon during the early fall without the star effects caused by exposed or directed lighting.

Only lights required for marine navigational safety will be directed to the area outside the drill rig. These would be the hazard warning lights or beacons on the derrick and potentially on the flare stack or other existing structure that may possess an obstacle to navigation. Support vessel lighting will comply with marine vessel lighting requirements for safety.

Drilling location illumination is required for the safety of personnel. It also will assist in the identification of any wildlife that may have entered the drill rig perimeter.

The lighting plan is designed to provide proper and adequate area illumination for the expected activities in those areas. The design illumination levels will be in line with ANSI/IESNA RP-7-01 - Practice for Industrial Lighting, produced by American National Standards Institute and The Illuminating Engineering Society of North America and in accordance with applicable OSHA standards and rules.

Drilling rig modules and the derrick should be compliant with constructed lighting systems in accordance with API RP500 recommended practices for mobile drilling units. Most exterior lighting is by directed mercury vapor flood lighting. This lighting will be directed downward, if possible, to eliminate collateral light from leaving the drilling location. If not possible, the lights will be replaced with cut-off lighting.

Emergency backup lighting systems will be installed to ensure adequate egress lighting in case of a power failure. Temporary lighting may be used in specific locations for safe repairs or modifications to equipment or structures.

SOI will provide MMS with a written statement of measures that will be taken to meet the objective of this stipulation following that upcoming meeting. With our submittal of the NMFS marine Mammal Monitoring and Mitigation Plan, SOI will include for MMS and USFWS, a plan for recording and reporting bird strikes that occur during approved activities to the MMS. SOI will discuss our proposed measures in a meeting with the MMS and USFWS.

Reports detailing light minimization and collision avoidance technologies in Appendix I provide a summary of options and alternatives to meet the objectives of this stipulation. An example of a bird strike reporting form is also included in Appendix I.

### Exploration Plan

OCS-Y 1805, Flaxman Island Block 6658  
OCS-Y 1807, Flaxman Island Block 6707  
OCS-Y 1808, Flaxman Island Block 6708  
OCS-Y 1809, Flaxman Island Block 6709  
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OCS-Y 1834, Flaxman Island Block 6874  
OCS-Y 1841, Barter Island Block 6801  
OCS-Y 1842, Barter Island Block 6802  
OCS-Y 1845, Barter Island Block 6962  
OCS-Y 1845, Barter Island Block 7117  
OCS-Y 1743, Harrison Bay Block 6222

## **12 ENVIRONMENTAL MITIGATION MEASURE INFORMATION**

The proposed action does not involve any mitigation measures other than those required by laws and regulations, including all applicable federal, state, and local requirements concerning air emissions, discharges to water, and solid waste disposal, as well as any additional permit requirements. All project activities will be conducted under SOI's Beaufort Sea Regional Exploration ODPCP.

## Exploration Plan

OCS-Y 1805, Flaxman Island Block 6658  
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 OCS-Y 1842, Barter Island Block 6802  
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 OCS-Y 1845, Barter Island Block 7117  
 OCS-Y 1743, Harrison Bay Block 6222

**13 SUPPORT VESSELS AND AIRCRAFT INFORMATION****(13a) General**

Type	Maximum Fuel Tank Storage Capacity	Maximum No. In Area at Any Time	Trip Frequency or Duration
Offshore Support Vessels	TBD	1	Permanently in area
Tug Boats (in support of Endeavor)	TBD	1	Permanently in area
Anchor Handling / Supply Vessels		3	
Tor / Vidar Viking (2007)	7,485 bbls		Permanently in area
Jim Kilabuk	2,768 bbls		Once every 2 weeks
Nordica (2007)	15,725 bbls		Permanently in area
Fennica (2008-09)	15,725 bbls		Permanently in area
Ice Breaker		2	
- Kapitan Dranitsyn	21,933 bbls		Permanently in area
- Vladimir Ignatuk	18,360 bbls		
Oil Spill Response Vessel (ECO)	6,868 bbls	1	Permanently in area
Fixed Wing (MMO overflights)	9 bbls	3	Once per day
Helicopter (2 crew change, 1 SAR)	18 bbls	3	Twice per day

**(13b) Diesel Oil Supply Vessels**

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
400-foot length	150,000 bbls	Once per season	Vessel will transit from South Alaska, following coastline

**(13d) Solid and Liquid Wastes Transportation**

This table quantifies the envisioned wastes that will not meet discharge criteria. These wastes will either be hauled to a lightering barge located North of the West Dock at Prudhoe Bay and then lightered into the West dock for disposal in a permitted facility for a given type of waste or removed to Canada aboard the project service boat Jim Kilabuk, for disposal in a permitted site. The quantities are empirical and are derived from experience and similar operations.

Type of Waste Approx. Composition	Total Amount	Name/Location	Rate	Transport Method
Water-Based Mud	20 bbls/year	Oxbow Landfill Greater Prudhoe Bay Oilfield or Phillips Services Anchorage, AK (Pending SOI Audit)	0.5 bbls/day (max anticipated)	Trucks – Mud volume is for mud that does not meet discharge requirements.
Chemical Products and General Hazardous Waste	25 bbls/year	Oxbow Landfill Greater Prudhoe Bay Oilfield or Phillips Services Anchorage, AK (Pending SOI Audit)	1 bbls/day (Max anticipated)	Drums on work boats then trucks
Trash and Debris (Non-recyclables & Recyclables)	300 bbls/month	Oxbow Landfill Greater Prudhoe Bay Oilfield or Phillips Services Anchorage, AK (Pending SOI Audit)	10 bbls/day	All trash will be hauled aboard the new OSRV or the Jim Kilabuk referred to here as service vessels. The OSRV will be Jones Act compliant but not the Jim Kilabuk. The OSRV will have to haul to the offshore lightering barge.

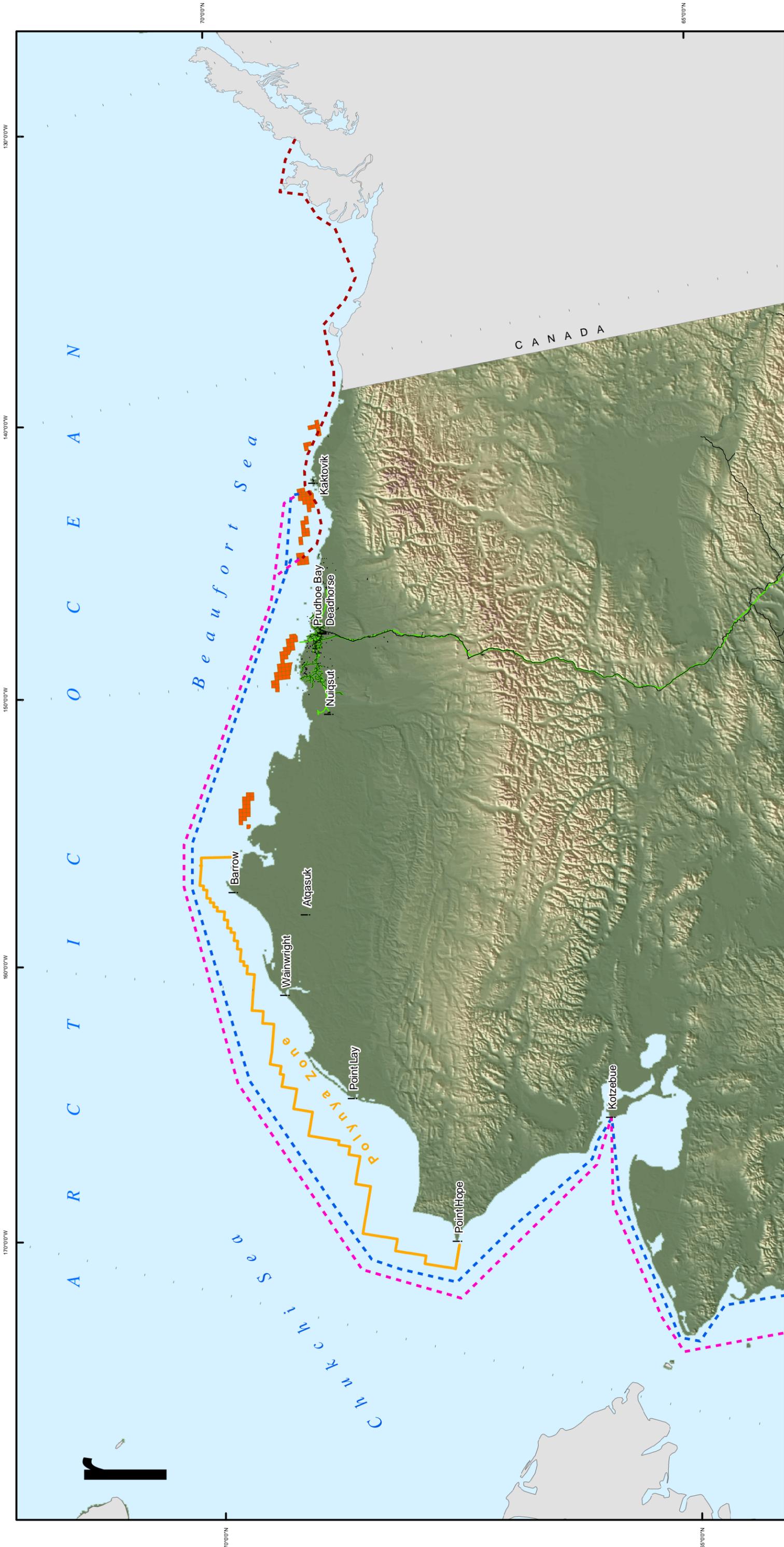
All drilling mud is to be water based mud and will be generated on board of the drilling vessels. It will be disposed of overboard per the requirements of the NPDES for the Beaufort Sea, as per the latest updates. All of the drilling activities will be seaward of the 20 m isobath and will comply with all of the testing requirements for drilling fluids discharged overboard. The mud will be in recyclable bags and the mud additives will be contained in sacks stored on board the drilling vessels. The barite will be stored in bulk form and will be blown down to the sea for cleaning, air permit permitting. The mud and additives will be mixed on board and used in well drilling activities. The sacks will be incinerated or backhauled to an approved disposal site and the recyclable bags stored for later return to the supplier. Once the mud is expended it will be discharged overboard as per the general permit. A MMS APD will be obtained prior to the start of any relief well. This action will be initiated on the first signs of the requirement to drill such a well.

**(13e) Aircraft Waste Transportation**

No waste movements will be made with air transportation.

**(13f) Vicinity Map and Travel Routes**

No drilling activity will require air routes in and out of Kaktovik. All of the scheduled flights to the rigs will be from Dead Horse airport. The flight routes are shown in the document. Therefore for the drilling operations it is not envisioned to have any regular scheduled flights in or out of Kaktovik. The airport at Kaktovik will be used only in emergencies. .



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**SHELL EXPLORATION & PRODUCTION CO.**

Discoverer and Kulluk Travel Routes

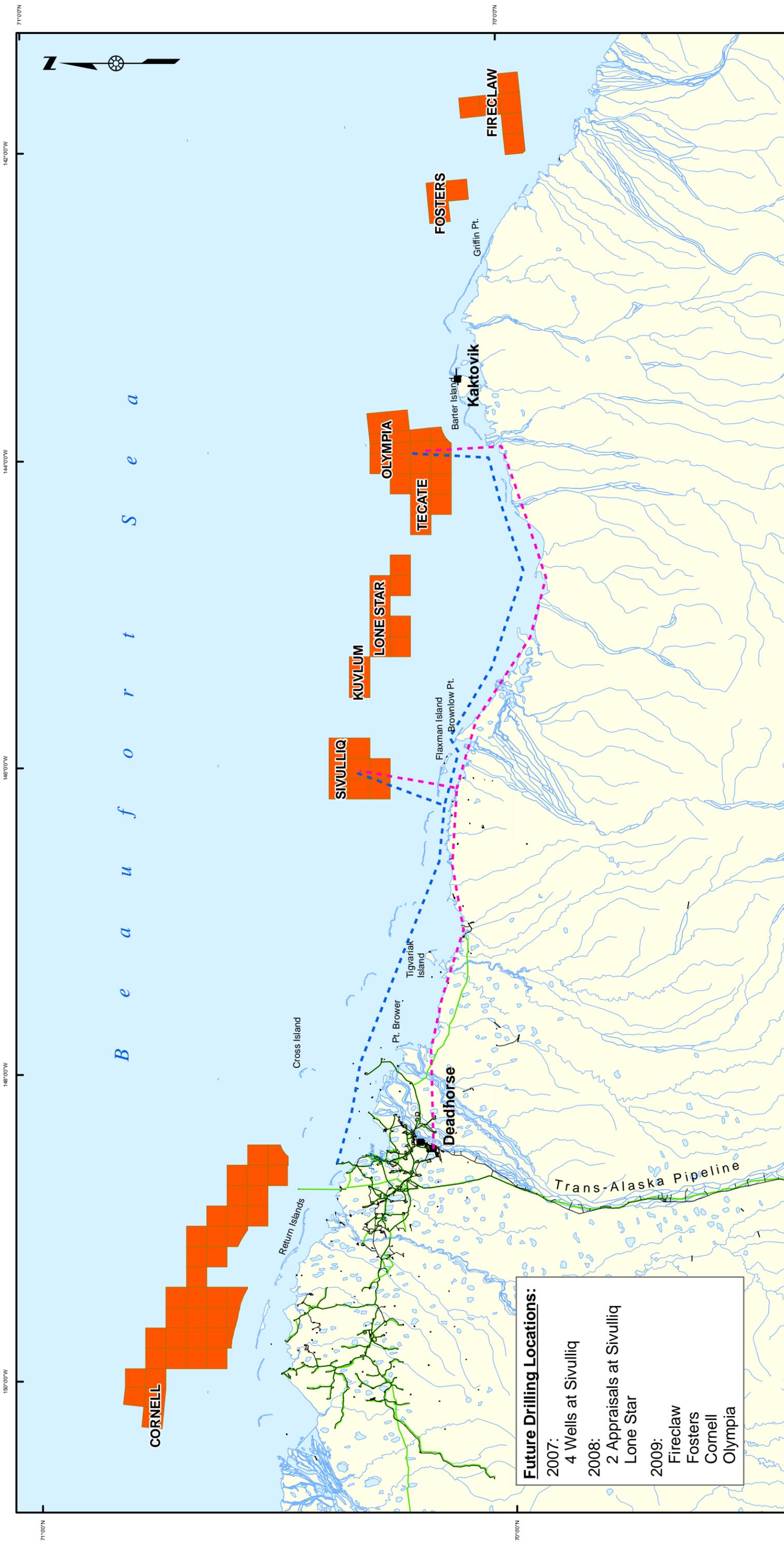
SCALE: 0 50 100 200 Mi

Lynx: 15067-214.mxd, 11/17/06, R00

- Shell Lease Blocks
- Pipelines
- Roads
- Villages
- Discoverer: Inbound Route
- Discoverer: Outbound Route
- Kulluk: Inbound and Outbound Routes

Note: All routes are prospective and incident travel routes will be in accordance with negotiated agreements with Alaska Eskimo Whaling Commission and Village Whaling Captains Association.

\*Ice Management vessels to accompany Discoverer and Kulluk inbound and outbound.



<p><b>SHELL OFFSHORE, INC.</b></p>	<p>ASRC Energy Services Regulatory &amp; Technical Services 3900 C Street, Suite 601 Anchorage, Alaska 99503 Phone (907) 339-5467 Fax (907) 339-5475 www.asrcenergy.com</p>	<p><b>Open Water Program Activities</b></p> <p>SCALE: 0 5 10 20 Mi</p>
<p>Note: All routes are prospective and incident travel routes will be in accordance with negotiated agreements with Alaska Eskimo Whaling Commission and Village Whaling Captains Association</p>		

## Exploration Plan

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**14 ONSHORE SUPPORT FACILITIES INFORMATION****(14a) General**

Name	Location	Existing/New/Modified
Deadhorse Base	Deadhorse, Alaska	New
West Dock	Prudhoe Bay	Existing

SOI's onshore support base for air transportation for the drilling operation will be the Deadhorse Base, located along the airport runway at the Deadhorse, Alaska Airport. Marine support for the drilling operation will be from the BP operated West Dock located within the Prudhoe Bay Unit and on the State of Alaska Tidelands Leases ADL 63771, 72111, and 402409; however, negotiations for a usage agreement have not been completed.

The Kulluk drilling rig will mobilize to the Alaskan Beaufort from McKinley Bay, Tuktoyaktuk, NWT, Canada where it will winter. The Discoverer rig will come from Singapore.

**(14b) Support Base Construction or Expansion**

SOI plans to sublease the Deadhorse support base; the sublessor is constructing this facility.

**(14c) Support Base Construction or Expansion Timetable**

The facility construction will be complete by April 1, 2007.

**(14d) Waste Disposal**

This table quantifies the envisioned wastes that will be generated at the Dead Horse Base Operations Unit. This is an onshore facility operated by a Shell contractor and will generate and dispose of wastes as noted in the following table. The quantities are empirical and are derived from experience and similar operations.

Name/Location of Facility	Type of Waste	Amount	Rate	Disposal Method
Oxbow Landfill, Greater Prudhoe Bay Oilfield (Pending Audit)	Non-hazardous Trash and Debris Oily Rags & filters, etc.	300 bbls/month	10 bbls/day	Land farmed &/or incinerated
Oxbow Landfill, Greater Prudhoe Bay Oilfield (Pending Audit) or Philips Services Anchorage, AK	Paint, solvents, unused chemicals, batteries, lamps, etc.	25 bbls/yr	1 bbl/day	Hazardous waste disposal
Oxbow Landfill, Greater Prudhoe Bay Oilfield (Pending Audit) or Philips Services Anchorage, AK	Used Oil & Glycol	1 bbls/month	1 bbl/month	Land farmed &/or incinerated
Disposal Well, Greater Prudhoe Bay Oilfield (Pending Audit)	Black Water	300 bbls/month	10 bbls/day	Injected
Waste Water Treatment Plant, Deadhorse, AK (Pending Audit)	Grey Water	900 bbls/month	30 bbls/day	Water Treatment

## **15 Coastal Consistency Information**

### **ALASKA** COASTAL ZONE MANAGEMENT CONSISTENCY CERTIFICATION

#### **INITIAL EXPLORATION PLAN**

##### Type of Plan

##### Exploration Plan

OCS-Y 1805, Flaxman Island Block 6658  
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OCS-Y 1845, Barter Island Block 7117  
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#### **Coastal Consistency Information**

SOI has completed the analysis of the proposed Beaufort Sea OCS Drilling Program for consistency with the ACMP Standards for Development (“state-wide standards”) and the NSB Coastal Management Program (NSBCMP) enforceable policies. The project analyses and consistency certification is required by 15 CFR 930.58(a)(3) and (4) and Section 307(c)(1) of the Coastal Zone Management Act. The ACMP consistency analysis follows.

#### **SHELL OFFSHORE INC. (SOI)**

Operator



---

Susan Childs, Regulatory Affairs Coordinator, Alaska  
Certifying Official

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January 12, 2007

Date

Shell Offshore Inc (SOI), analyzed the proposed Beaufort Sea Outer Continental Shelf (OCS) Drilling Program for consistency with the Alaska Coastal Management Program (ACMP) Standards for Development (“state-wide standards”) and the North Slope Borough Coastal Management Program (NSBCMP) enforceable policies. The project analyses and consistency certification is required by 15 CFR 930.58(a)(3) and (4) and Section 307(c)(1) of the Coastal Zone Management Act.

## **SCOPE OF REVIEW**

The scope of review includes exploration and appraisal well drilling in the Beaufort Sea OCS during the open water season. All proposed activities are planned for oil and gas leases managed by the U.S. Department of Interior, Minerals Management Service (MMS).

SOI is proposing to use the anchored Semi-submersible Drilling Unit, the Kulluk, and the anchored drill ship, Frontier Discoverer (Discoverer) to drill multiple wells across the Beaufort OCS over the next several years. The MMS Exploration Plan describes the proposed project activities and mitigation that insures compliance with the ACMP standards, NSBCMP enforceable policies, OCS Sale 195 lease stipulations, and MMS Notices to Lessees. The Coastal Project Questionnaire and the regulatory approval applications, included with the Exploration Plan provide additional project information.

## **ACMP COASTAL MANAGEMENT CONSISTENCY ANALYSIS**

### ***11 AAC 112.200. Coastal development.***

*(a) In planning for and approving development in or adjacent to coastal waters, districts and state agencies shall manage coastal land and water uses in such a manner that those uses that are economically or physically dependent on a coastal location are given higher priority when compared to uses that do not economically or physically require a coastal location.*

*(b) Districts and state agencies shall give, in the following order, priority to*

*(1) water-dependent uses and activities;*

*(2) water-related uses and activities; and*

*(3) uses and activities that are neither water-dependent nor water-related for which there is no practicable inland alternative to meet the public need for the use or activity.*

*(c) The placement of structures and the discharge of dredged or fill material into coastal water must, at a minimum, comply with the standards contained in 33 C.F.R. Parts 320 - 323, revised as of July 1, 2003.*

(a) The exploration program does not require permanent shoreline or offshore facilities. Project activities subject to federal regulations include the drilling and testing program, Oil Discharge Prevention and Contingency Plan (ODPCP), air emissions, NPDES discharges, and potential interactions with protected and endangered species.

(b)(1) The offshore drilling program is a water-dependant use and activity.

(c) SOI has applied for coverage from the U.S. Army Corps of Engineers, under the Nation Wide Permit program, to place the drilling units (structures) in AK coastal waters.

### ***11 AAC 112.210. Natural hazard areas.***

*(a) In addition to those identified in 11 AAC 112.990, the department, or a district in a district plan, may designate other natural processes or adverse conditions that present a threat to life or property in the coastal area as natural hazards. Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.*

*11 AAC 112 — G 5*

*(b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b), by a district.*

*(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.*

*(d) For purposes of (c) of this section, “appropriate measures in the siting, design, construction, and operation of the proposed activity” means those measures that, in the judgment of the coordinating agency, in consultation with the department’s division of geological and geophysical surveys, the Department of Community and Economic Development as state coordinating agency for the National Flood Insurance Program under 44 C.F.R. 60.25, and other local and state agencies with expertise,*

*(1) satisfy relevant codes and safety standards; or*

*(2) in the absence of such codes and standards;*

*(A) the project plans are approved by an engineer who is registered in the state and has engineering experience concerning the specific natural hazard; or*

*(B) the level of risk presented by the design of the project is low and appropriately addressed by the project plans.*

(a) The project area is not designated as a natural hazard area by the State or North Slope Borough (NSB) Coastal District.

(b) Although the area is not designated as a natural hazard area, SOI recognizes that the exploration program is located in an area that is characterized by active sea ice movement, ice scouring, and sea storm surges.

(c) The Kulluk and Discoverer are ice class drilling units designed, engineered, and constructed to safely operate in Beaufort Sea. Ice management vessels will be assisting operations to further protect workers and equipment operations from natural ice hazards. Shallow hazard site clearance approvals will be secured from MMS prior to drilling operations on OCS leases.

(d) All Applications to Drill (APD) will be prepared by registered engineers who will ensure that appropriate well design and drilling plans for these offshore wells meet regulatory requirements and relevant codes and safety standards.

***11 AAC 112.220. Coastal access.***

*Districts and state agencies shall ensure that projects maintain and, where appropriate, increase public access to, from, and along coastal water.*

The SOI exploration drilling program will not interfere or intentionally increase public access to, from or along the coast. The proposed operations are further from shore than typically used by the public and local coastal residents.

***11 AAC 112.230. Energy facilities.***

*(a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:*

*(1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;*

*(2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected*

*community needs;*

*(3) consolidate facilities;*

*(4) consider the concurrent use of facilities for public or economic reasons;*

*(5) cooperate with landowners, developers, and federal agencies in the development of facilities;*

*(6) select sites with sufficient acreage to allow for reasonable expansion of facilities;*

*(7) site facilities where existing infrastructure, including roads, docks, and airstrips, is capable of satisfying industrial requirements;*

*G 6 — 11 AAC 112*

*(8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;*

*(9) encourage the use of vessel traffic control and collision avoidance systems;*

*(10) select sites where development will require minimal site clearing, dredging, and construction;*

*(11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;*

*(12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;*

*(13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;*

*(14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;*

*(15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;*

*(16) site facilities so that associated vessel operations or activities will not result in overcrowded harbors or interfere with fishing operations and equipment.*

*(b) The uses authorized by the issuance of state and federal leases, easements, contracts, rights-of-way, or permits for mineral and petroleum resource extraction are uses of state concern.*

(a)(1) The Kulluk and Discoverer will operate under federal approvals designed to insure compliance with environmental laws and regulations employing state of the art drilling techniques and technologies that minimize and mitigate adverse environmental effects. A Conflict Avoidance Agreement (CAA) will be entered into by SOI, the Alaska Eskimo Whaling Commission (AEWC) and Beaufort Sea Village Whaling Captains Associations along with coordination and consultation with the local affected communities to minimize adverse social effects with Bowhead whale hunters and subsistence activities, regionally important cultural and economic activities. Marine mammal monitoring programs will include communications centers in Barrow, Deadhorse, and Kaktovik and shipboard marine mammal observers.

(2) The seasonal open water exploration drilling program is on OCS oil and gas leases designated for resource exploration and development. Projected community needs include subsistence conflict avoidance, employment and social investment opportunities. SOI's program is designed to be compatible with these community needs with active consultation and coordination with subsistence users, including a Conflict Avoidance Agreement with the AEWC, direct and contractor local hire provisions and identification of appropriate opportunities for social investment.

(3) Facility consolidation includes the synergies of two drilling operations associated with project access, communication centers, re-supply, ice management, vessel fueling operations, spill prevention and response equipment, crew change outs.

- (4) Concurrent use of facilities are described in (3) above.
- (5) The exploration program is temporary and seasonal. Operations will be conducted in consultation and coordination with landowners, developers, and under federal agency approvals.
- (6) The project area is not constrained for future expansion.
- (7) The exploration program is temporary and seasonal, located on OCS leases with no industrial infrastructure. Existing facilities such as the Deadhorse Airport, West Dock, oilfield road system, and potential staging areas proximal to these facilities would provide operational and logistic support.
- (8) No harbors are planned for the exploration program that targets resource assessment located in OCS waters north of the barrier islands and generally outside traditional shipping lanes in the Beaufort Sea. Shallow hazard site clearance approvals from MMS will insure drilling operations are conducted in areas cleared of sea floor obstructions. Drift ice will be actively managed by ice breakers and ice class tugs.
- (9) Vessel traffic will be coordinated through the use of industry established communications centers and through normal U.S. Coast Guard and industry vessel communication protocols. Collision avoidance systems include the use of shipboard GPS tracking and radar systems.
- (10) This is an exploration drilling program with temporary and seasonal operations, not development program. Minimal subsea bed excavation for mud line cellars at drilling locations designed to protect well head casing and blowout preventers from potential ice scour events. The vessels use the placement and maintenance of vessel anchoring systems that will be removed upon completion of each well. Permanent facilities area limited to the surface casing and drill pipe after well abandonment.
- (11) Exploration drilling will be conducted with appropriate spill prevention and response strategies and equipment available to protect marine resources.
- (12) The temporary and seasonal exploration program may have minimal to no impact on fish and wildlife migration patterns. Exploration activities will occur during the open water season. Marine mammals, fish, and seabirds are the fish and wildlife resources present in the area during the time that these operations take place. The short term and insignificant effects will likely result in the localized displacement of fish and wildlife. Disturbances are not likely to result in long-term effects to fish, marine mammals, and seabirds that may be foraging or staging in the area. (USDOI MMS. 2003.)
- (13) The exploration program will be conducted in a manner that protects these resources.
- (14) The exploration program will be conducted in a manner that controls effluents under NPDES GP AKG-284-0000 discharge criteria. Spill prevention strategies are designed to avoid and minimize the release of hydrocarbons and other contaminants. In the event of a spill, response equipment will be available and deployed to control the release and foster product recovery and proper disposal in accordance with an approved ODPCP.
- (15) Offshore winds and air currents of the project area are sufficient to disperse air borne emissions that cannot be captured. The program will be conducted in compliance with a U.S. Environmental Protection Agency (EPA) air quality permit for OCS drilling operation emissions.

(16) The proposed program will not result in the overcrowding of harbors. Drilling operations will not interfere with fishing operations and equipment.

(b) The proposed exploration drilling program is located on OCS leases, and will secure appropriate federal approvals prior to operations, therefore is a use of state concern.

**11 AAC 112.240. Utility routes and facilities.**

*(a) Utility routes and facilities must be sited inland from beaches and shorelines unless*

*(1) the route or facility is water-dependent or water related; or*

*(2) no practicable inland alternative exists to meet the public need for the route or facility.*

*(b) Utility routes and facilities along the coast must avoid, minimize, or mitigate*

*(1) alterations in surface and ground water drainage patterns;*

*(2) disruption in known or reasonably foreseeable wildlife transit;*

*(3) blockage of existing or traditional access.*

The SOI open water exploration drilling program will not be constructing any utility routes or facilities; therefore this standard is not applicable.

**11 AAC 112.250. Timber harvest and processing.**

*AS 41.17 (Forest Resources and Practices Act) and the regulations adopted under that chapter with respect to the harvest and processing of timber are incorporated into the program and constitute the components of the program with respect to those purposes.*

Timber harvest and processing is not within the scope of the OCS exploration program, therefore this standard is not applicable.

**11 AAC 112.260. Sand and gravel extraction.**

*Sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits if there is no practicable alternative to coastal extraction that will meet the public need for the sand or gravel.*

Sand and gravel will not be used for the exploration drilling program. Subsea bed excavation is limited to the installation of mud line cellars designed to protect well casings and blow out preventors at each well site.

**11 AAC 112.270. Subsistence.**

*(a) A project within a subsistence use area designated by the department or under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.*

*(b) For a project within a subsistence use area designated under 11 AAC 114.250(g), the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of*

*(1) a consistency review packet submitted under 11 AAC 110.215; and*

*(2) a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.*

*(c) Repealed 10/29//2004, Register 172.*

*(d) Except in nonsubsistence areas identified under AS 16.05.258, the department may, after consultation with the appropriate district, federally recognized Indian tribes, Native corporations, and other appropriate persons or groups, designate areas in which a subsistence use is an important use of coastal resources as demonstrated by local usage.*

*(e) For purposes of this section, “federally recognized Indian tribe,” “local usage”, and “Native corporation” have the meanings given in 11 AAC 114.990.*

- (a) The program is located within the Beaufort Sea Bowhead whale subsistence use area. The CAA and NOAA/National Marine Fisheries Service, Incidental Harassment Authorization (IHA) and Marine Mammal Monitoring and Mitigation Program (MMMMP) are designed to avoid, minimize, and mitigate potential adverse impacts to this subsistence resource. A bear and pacific walrus interaction plan has been developed to minimize human and polar and grizzly bear and walrus interactions and encounters. The IHA application, MMMMP and the Bear Plan includes an evaluation of reasonably foreseeable adverse impacts to marine subsistence resources, and include provisions to avoid, minimize, and mitigate potential impacts.
- (b) Reasonably foreseeable adverse impacts potentially include the migratory deflection of Bowhead whales that may result in increased effort, risk, and expenses associated with additional travel to conduct the subsistence hunt. It also may contribute to an unsuccessful hunt.

**11 AAC 112.280. Transportation routes and facilities.**

*Transportation routes and facilities must avoid, minimize, or mitigate*

- (1) alterations in surface and ground water drainage patterns;*
- (2) disruption in known or reasonably foreseeable wildlife transit; and*
- (3) blockage of existing or traditional access.*

- (1) The offshore exploration drilling program will not alter surface and ground water drainage patterns.
- (2) The program will not disrupt terrestrial wildlife transit, and marine operations would avoid, minimize, and mitigate wildlife transit through the use of a marine mammal observer program designed to guide vessel transit through the project area while avoiding or minimizing disruptions and deflections of marine mammals.
- (3) Existing or traditional access will not be blocked.

**11 AAC 112.300. Habitats.**

*(a) Habitats in the coastal area that are subject to the program are G 8 — 11 AAC 112*

- (1) offshore areas;*
- (2) estuaries;*
- (3) wetlands;*
- (4) tideflats;*
- (5) rocky islands and sea cliffs;*
- (6) barrier islands and lagoons;*
- (7) exposed high-energy coasts;*
- (8) rivers, streams, and lakes and the active floodplains and riparian management areas of those rivers, streams, and lakes; and*
- (9) important habitat.*

*(b) The following standards apply to the management of the habitats identified in (a) of this section:*

- (1) offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (2) estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to*
  - (A) adequate water flow and natural water circulation patterns; and*
  - (B) competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (3) wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water*

*flow and natural drainage patterns;*

*(4) tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to*

*(A) water flow and natural drainage patterns; and*

*(B) competing uses such as commercial, recreational, or subsistence uses, to the extent that those uses are determined to be in competition with the proposed use;*

*(5) rocky islands and sea cliffs must be managed to*

*(A) avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and*

*(B) avoid the introduction of competing or destructive species and predators;*

*(6) barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts*

*(A) to flows of sediments and water;*

*(B) from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and*

*(C) from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;*

*(7) exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts*

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*(A) to the mix and transport of sediments; and*

*(B) from redirection of transport processes and wave energy;*

*(8) rivers, streams, and lakes must be managed to avoid, minimize, or mitigate significant adverse impacts to*

*(A) natural water flow;*

*(B) active floodplains; and*

*(C) natural vegetation within riparian management areas; and*

*(9) important habitat*

*(A) designated under 11 AAC 114.250(h) must be managed for the special productivity of the habitat in accordance with district enforceable policies adopted under 11 AAC 114.270(g);*

*or*

*(B) identified under (c)(1)(B) or (C) of this section must be managed to avoid, minimize, or mitigate significant adverse impacts to the special productivity of the habitat.*

*(c) For purposes of this section,*

*(1) “important habitat” means habitats listed in (a)(1) – (8) of this section and other habitats in the coastal area that are*

*(A) designated under 11 AAC 114.250(h);*

*(B) identified by the department as a habitat*

*(i) the use of which has a direct and significant impact on coastal water; and*

*(ii) that is shown by written scientific evidence to be biologically and significantly productive; or*

*(C) identified as state game refuges, state game sanctuaries, state range areas, or fish and game critical habitat areas under AS 16.20;*

*(2) “riparian management area” means the area along or around a waterbody within the following distances, measured from the outermost extent of the ordinary high water mark of the waterbody:*

*(A) for the braided portions of a river or stream, 500 feet on either side of the waterbody;*

*(B) for split channel portions of a river or stream, 200 feet on either side of the waterbody;*

*(C) for single channel portions of a river or stream, 100 feet on either side of the waterbody;*

*(D) for a lake, 100 feet of the waterbody.*

(a)(1) The exploration program is planned for offshore OCS oil and gas leases. Commercial, recreational, and subsistence fishing is generally limited to nearshore coastal waters and inland streams and rivers, not in competition with the proposed use.

(a)(9) Offshore settings are important habitat for marine waterfowl and flora and fauna. SOI's operations are planned to operate safely and in compliance with applicable laws and regulations to avoid and minimize adverse impacts to the environment and marine habitats.

***11 AAC 112.310. Air, land, and water quality.***

*Notwithstanding any other provision of this chapter, the statutes and regulations of the Department of Environmental Conservation with respect to the protection of air, land, and water quality identified G 10 — 11 AAC 112 in AS 46.40.040(b) are incorporated into the program and, as administered by that department, constitute the exclusive components of the program with respect to those purposes.*

Air emissions will be in compliance with an EPA Air Quality Permit Part 55 OCS Rules reviewed for consistency with ADEC regulations prior to permit issuance. Waste water discharges will meet the criteria of NPDES General Permit AKG-284-0000, previously found consistent with the Alaska Water Quality Standards. The federal ODPCP will be reviewed by the ADEC for consistency with State Oil Discharge Prevention Contingency Plan requirements.

***11 AAC 112.320. Historic, prehistoric, and archeological resources.***

*(a) The department will designate areas of the coastal zone that are important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes.*

*(b) A project within an area designated under (a) of this section shall comply with the applicable requirements of AS 41.35.010 – 41.35.240 and 11 AAC 16.010 – 11 AAC 16.900.*

The proposed exploration drilling program located, offshore on OCS leases is not anticipated to yield historic, prehistoric, or archeological resources. If the shallow hazards site clearance data suggests potential resources lie below the seabed, further evaluation would be initiated in consultation with MMS and the State Historic Preservation Office (SHPO).

## **NSB Coastal Management Program (NSBCMP) Enforceable Policies**

### **NSBCMP Policy 2.4.3(a)**

*When extensive adverse impacts to a subsistence resource are likely and cannot be avoided or mitigated, development shall not deplete subsistence resources below the subsistence needs of local residents of the borough.*

*Intent: The impacts addressed in this policy may result from a single project or from a series of projects. To implement this policy, the NSB would need to establish:*

- 1. Documentation of subsistence needs.*
- 2. A preponderance of the evidence indicating that the project will deplete a subsistence resource below the level necessary to meet those needs.*

The SOI Beaufort Sea OCS exploration drilling program is not anticipated to cause extensive adverse impacts, or deplete subsistence resources. The MMMMP, and CAA with Bowhead whale hunters and community consultation and coordination with other subsistence resource users will avoid and mitigate potential adverse impacts.

### **NSBCMP Policy 2.4.3 (b)**

*Offshore drilling and other development within the area of bowhead whale migration during the migration seasons shall not significantly interfere with subsistence activities nor jeopardize the continued availability of whales for subsistence purposes.*

*Intent: The area of the bowhead whale migration will be determined annually on the basis of best scientific information available, including that provided by the North Slope Borough and National Marine Fisheries Service monitoring programs. With respect to seismic exploration, the policy will be implemented by prohibiting seismic exploration in the vicinity of migrating whales when the exploration is likely to significantly interfere with subsistence activities or to jeopardize the continued availability of whales for subsistence purposes.*

The CAA provides for communication and coordination with Bowhead whale hunters and is designed to avoid, minimize, and mitigate potential adverse impacts to subsistence whaling.

#### **NSBCMP Policy 2.4.3 (c)**

*Development on barrier islands and in the marine and estuarine waters within 3 miles of the passes of Kasegaluk Lagoon intensively used by beluga whales shall not significantly interfere with subsistence use of beluga whales; shall not cause the whales to be displaced from these passes; and shall not jeopardize the continued use of these passes and lagoon system by beluga whales. The passes intensively utilized by beluga whales are Kukpowruk Pass, Akunik Pass, Utukok Pass, Icy Cape Pass, and Alokiakatat Pass (see Map 11 of the NSB Resource Atlas).*

Not applicable, this enforceable policy covers regions outside of the project area.

#### **NSBCMP Policy 2.4.3 (d)**

*Development shall not preclude reasonable subsistence user access to a subsistence resource.*

*Intent: The intent of this policy is to ensure that development will not preclude reasonable subsistence user access to a subsistence resource on which they depend. "Reasonable access" is access using means generally available to subsistence users. Reasonable opportunities for access to customary subsistence resources must not be precluded. "Precluding access" addresses not only means of access, but access to areas where resources are present and can be used by subsistence users.*

*Policy 2.4.3.(e) [sic] should be distinguished from Policy 2.4.5.1(b). Policy 2.4.3.(e) [sic] requires that access to a subsistence resource not be precluded. Policy 2.4.5.1(b) applies when access is diminished or restricted. Policy 2.4.5.1(b) provides that access to subsistence resources be restricted only when there are no feasible and prudent alternatives. This is intended to discourage restrictions on subsistence, but it does not absolutely prohibit such restrictions.*

SOI's OCS exploration drilling program will not preclude reasonable subsistence user access to subsistence resources and generally avoid areas where subsistence activities are conducted.

#### **NSBCMP Policy 2.4.3 (e)**

*Development which is likely to disturb cultural or historic sites listed on the National Register of Historic Places; sites eligible for inclusion in the National Register; or sites identified as important to the study, understanding, or illustration of national, state, or local history or prehistory shall 1) be required to avoid the sites; or 2) be required to consult with appropriate local, state and federal agencies and survey and excavate the site prior to disturbance. (Descriptions of sites identified to date are contained in Appendix C of the North Slope Borough Coastal Management Program Background Report and referenced on Map 2 of the NSB Resource Atlas).*

The proposed offshore drilling activities are not anticipated to have adverse effects to cultural or historic sites.

**NSBCMP Policy 2.4.3. (f)**

*Development shall not significantly interfere with traditional activities at cultural or historic sites identified in the coastal management program.*

No interference with traditional activities at cultural or historic sites will result from SOI's OCS exploration drilling program.

**NSBCMP Policy 2.4.3 (g)**

*Development shall not cause surface disturbance of newly discovered historic or cultural sites prior to archaeological investigation.*

In the unlikely event new historic or cultural sites are identified during operations, sea floor disturbing operations will be immediately stopped until an archeological investigations and consultation with the MMS and SHPO has been performed.

**NSBCMP Policy 2.4.3. (h)**

*Development shall comply with state or federal land, air and water quality standards or regulations.*

SOI's OCS exploration drilling will be conducted in compliance with federal approvals and the ACMP.

**NSBCMP Policy 2.4.4. Required Features for Applicable Development**

**NSBCMP Policy 2.4.4.(a)**

*Vehicles, vessels, and aircraft that are likely to cause significant disturbance must avoid areas where species that are sensitive to noise or movement are concentrated at times when such species are concentrated. Concentrations may be seasonal or year-round and may be due to behavior (e.g., flocks or herds) or limited habitat (e.g., polar bear denning, seal haul-outs). Horizontal and vertical buffers will be required where appropriate. Concern for human safety will be given special consideration when applying this policy.*

SOI's OCS exploration drilling program and support activities will avoid noise disturbance to concentrated species to the maximum extent practicable. Ship board observers would identify potential impacts and help minimize impacts to species sensitive to noise. Horizontal and vertical buffers for aircraft would be employed where appropriate to avoid disturbing seals, polar bears, pacific walrus, and bird concentrations.

**NSBCMP Policy 2.4.4.(b)**

*Offshore structures must be able to withstand geophysical hazards and forces, which may occur while at the drill site. Design criteria must be based on actual measurements or conservative estimates of geophysical forces. In addition, structures must have monitoring programs and safety systems capable of securing wells in case unexpected geophysical hazards or forces are encountered.*

The Kulluk and Discoverer are designed, engineered, and constructed to operate in the ice conditions present in the Beaufort Sea.

**NSBCMP Policy 2.4.4.(c)**

*Development resulting in water or airborne emissions must comply with all state and federal regulations.*

EPA Air quality permit approval will demonstrate compliance with this policy.

**NSBCMP Policy 2.4.4.(d)**

*Industrial and commercial development must be served by solid waste disposal facilities, which meet state and federal regulations.*

SOI will use permitted solid waste disposal facilities.

**NSBCMP Policy 2.4.4.(e)**

*Development not on a central sewage system is required to impound and process effluent to state and federal quality standards.*

SOI will discharge wastewater effluents under EPA NPDES General Permit AKG-284-0000 meeting state and federal water quality standards.

**NSBCMP Policy 2.4.4 (f)**

*Plans for offshore drilling activities are required to include a relief well drilling plan and an emergency countermeasure plan. The relief well drilling plan must identify suitable alternative drilling rigs and their location; identify alternative relief well drilling sites; identify support equipment and supplies including muds; casing, and gravel supplies which could be used in an emergency; and specify the estimated time required to commence drilling and complete a relief well. The emergency countermeasures plan must identify the steps which will be taken to protect human life and minimize environmental damage in the event of 1) loss of a drilling rig; 2) ice override; or 3) loss or disablement of support craft or other transportation systems.*

SOI has developed a relief well drilling plan and an emergency countermeasure plan consistent with federal MMS requirements.

**NSBCMP Policy 2.4.4 (g)**

*Offshore drilling operations and offshore petroleum storage and transportation facilities are required to have an oil spill control and clean-up plan. The plan must contain a risk analysis indicating where oil spills are likely to flow under various sets of local meteorological or oceanographic conditions. Impact areas must be identified and strategies fully developed to protect environmentally sensitive areas; the spill control and clean-up equipment, which is available to the operator and the response time required to deploy this equipment under the various scenarios, must be contained in the risk analysis.*

*Intent: Policies 2.4.4.(f) and 2.4.4.(g) are not intended to establish new regulations for offshore facilities. They restate and highlight requirements of existing regulations. Industry will not be required to go to considerable additional effort as a result of these policies.*

SOI's OCS exploration drilling program will be conducted in compliance with an MMS approved ODPCP, subject to ADEC's ACMP consistency review.

**NSBCMP Policy 2.4.4.(h)**

*Offshore oil transport systems (e.g., pipelines) must be specially designed to withstand geophysical hazards, specifically sea ice.*

Not applicable for this exploration drilling program.

**NSBCMP Policy 2.4.4.(i)**

*All causeways are required to be sited and designed to allow free passage of fish, marine mammals, and molting birds with due consideration for migration patterns; to prevent changes in water circulation patterns that would have significant adverse impacts on fish and wildlife; and to ensure adequate sediment transport.*

Not applicable for this exploration drilling program.

**NSBCMP Policy 2.4.4.(j)**

*Residential development associated with industrial and resource extraction development must be removed and the area rehabilitated to standards consistent with the coastal management program when the industrial or extractive use is completed, unless removal is more environmentally harmful than nonremoval.*

Not applicable for this exploration drilling program.

**NSBCMP Policy 2.4.4.(k)**

*Impermeable lining and diking is required for fuel storage facilities with a capacity greater than 660 gallons.*

Not applicable for this offshore program that uses vessel fuel storage tanks.

**NSBCMP Policy 2.4.5. Best Effort Policies**

*All development must comply with each of the policies set out in sections 2.4.5.1 and 2.4.5.2 unless 1) the following criteria have been established; or 2) the policy is not applicable to the development.*

*(1) There is a significant public need for the proposed use and activity; and*

*(2) The development has rigorously explored and objectively evaluated all feasible and prudent alternatives to the proposed use or activity and cannot comply with the policy. When alternatives are eliminated from consideration, the reasons for their elimination shall be briefly documented by the developer.*

**NSBCMP Policy 2.4.5.1.**

*Development of the following categories or types will be allowed only if the development has met the criteria under 2.4.5 above, and the developer has taken all feasible and prudent steps to avoid the adverse impacts the policy was intended to prevent.*

*(a) Development that will likely result in significantly decreased productivity of subsistence resources or their ecosystems.*

The offshore exploration program will be conducted in compliance with a NOAA/NMFS IHA to protect whales and seals, and a USFWS Letter of Authorization for Polar bears and Pacific walrus to insure there will not be a significant decrease in these protected resources, or damage to their ecosystems.

*(b) Development which restricts subsistence user access to a subsistence resource.*

Subsistence user access will not be restricted.

*(c) Development activities from June 15 to July 31 that will likely displace beluga whales from Kasegaluk Lagoon. These development activities may include, but are not limited to, extensive barge or boat traffic; low altitude or frequent plane and helicopter traffic; and other activities resulting in excessive noise or other forms of disturbance.*

Not applicable, the project area is not located near Kasegaluk Lagoon.

*(d) Development on or near a shoreline that has the potential of adversely impacting water quality (e.g., landfills, or hazardous material storage areas, dumps, etc.). (Near, as used in the phrase "near the shoreline," is defined as that area within a 1,500 foot setback from the mean high water mark along the coast, lakeshore, or river).*

Not applicable to offshore activities.

*(e) Public highway development, except for village roads and streets and highways indicated in the state and/or local capital improvements program.*

Not applicable to this offshore exploration program.

*(f) Transportation development, including pipelines, which significantly obstructs wildlife migration.*

Not applicable to this exploration program.

*(g) Development to accommodate large scale movement of crude oil or natural gas via marine tankers. Intent: The intent of this policy is to limit development to accommodate large scale movement of crude oil or natural gas via marine tankers to instances where no feasible and prudent alternatives exist; recognizing that development of marine tanker facilities is a use of state concern.*

Not applicable to this exploration project.

*(h) Duplicative transportation corridors from resource extraction sites.*

Not applicable to this exploration program.

*(i) Mining of beaches, barrier islands or offshore shoals. In those circumstances where no feasible and prudent alternatives exist, substantial alteration of shoreline dynamics is prohibited.*

Not applicable to this exploration program.

*(j) Placement of structures in floodplains subject to a 50-year recurrence level and in geologic hazard areas as identified on the following coastal management maps in the NSB Resource Atlas: Map 6 - Areas of moderate and severe ridging and historic ice override. Map 7 and 22 - Areas of moderate and severe ice ridging.*

Not applicable to this exploration program.

#### **NSBCMP Policy 2.4.5.2**

*The following are required of applicable development except where the development has met the criteria of 2.4.5 above, and the developer has taken all feasible and prudent steps to maximize conformance with the policy.*

#### **NSBCMP Policy 2.4.5.2(a)**

*Mining (including sand and gravel extraction) in the coastal area shall be evaluated with respect to type of extraction operation, location, possible mitigation measures, and season so as to lessen, to the*

*maximum extent practicable, environmental degradation of coastal lands and waters (e.g., siltation of anadromous rivers and streams).*

Not applicable to this exploration program.

**NSBCMP Policy 2.4.5.2(b)**

*Development is required to be located, designed, and maintained in a manner that prevents significant adverse impacts on fish and wildlife and their habitat, including water circulation and drainage patterns and coastal processes.*

The proposed offshore exploration program is located and designed to not adversely impact fish and wildlife, their habitat, water circulation, drainage patterns, or coastal processes.

**NSBCMP Policy 2.4.5.2(c)**

*Resource extraction support facilities, including administration offices, operations, residences, and other uses not absolutely required in the field, must be located in a designated service base which is sited, designed, constructed, and maintained to be as compact as possible and to share facilities to the maximum extent possible.*

This is an offshore exploration drilling program intended to identify recoverable resources, not extract them.

**NSBCMP Policy 2.4.5.2(d)**

*Gravel extraction activities within floodplains shall maintain buffers between active channels and the work area, avoid instream work, permanent channel shifts and ponding of water, clearing of riparian vegetation, and disturbance to natural banks.*

Not applicable to this offshore exploration drilling program.

**NSBCMP Policy 2.4.5.2(e)**

*New subdivisions or other residential development must provide state-approved water and sewer service to prevent damage to fish and wildlife and their habitat.*

Not applicable to this exploration program.

**NSBCMP Policy 2.4.5.2(f)**

*Transportation facilities and utilities must be consolidated to the maximum extent possible.*

Not applicable to this exploration program.

**NSBCMP Policy 2.4.5.2(g)**

*Development within the ACMP -defined coastal habitats must be conducted in accordance with ACMP Standard 6 AAC 80.130(b), (c), and (d), and applicable policies of the North Slope Borough Coastal Management Program. These habitats include the following:*

- (1) offshore areas;*
- (2) estuaries;*

- (3) *wetlands and tideflats;*
- (4) *rocky Islands and seacliffs;*
- (5) *barrier Islands and lagoons;*
- (6) *exposed high-energy coasts;*
- (7) *rivers, streams and lakes; and*
- (8) *important upland habitat.*

The proposed offshore exploration drilling program would be conducted in accordance the ACMP habitat standard. Other enforceable policies related to habitat include NSBCMP 2.4.5.2(b), 2.4.6(c) and 2.4.6(e).

**NSBCMP Policy 2.4.5.2(h)**

*Development is required to be located, designed, and maintained in a manner that does not interfere with the use of a site that is important for significant cultural uses or essential for transportation to subsistence use areas.*

The offshore program is located to not interfere with the use of significant cultural uses or transportation to subsistence use areas.

**NSBCMP Policy 2.4.6 Minimization of Negative Impacts**

*Applicable development is required to minimize its impact as follows:*

**NSBCMP Policy 2.4.6(a)**

*Development associated with purely recreational uses of land and wildlife habitat (i.e., commercial hunting and fishing camps and recreational second-home subdivisions) shall minimize adverse impacts on subsistence activities.*

Not applicable to this offshore exploration drilling program (not a recreational use).

**NSBCMP Policy 2.4.6(b)**

*Siting, design, construction, and maintenance of transportation and utility facilities (including the ice roads) are required to minimize alteration of shorelines, water courses, wetlands, tidal marshes, and significant disturbance to important habitat and to avoid critical fish migration periods.*

Not applicable to the proposed offshore exploration drilling program that does not include transportation or utility facilities.

**NSBCMP Policy 2.4.6(c)**

*Development is required to maintain the natural permafrost insulation quality of existing soils and vegetation.*

Not applicable to the proposed offshore exploration drilling program.

**NSBCMP Policy 2.4.6(d)**

*Airports and helicopter pads are required to be sited, designed, constructed, and operated in a manner that minimizes their impact upon wildlife.*

The Kulluk and Discoverer have helipads. Operations will minimize potential impacts to wildlife.

**NSBCMP Policy 2.4.6(e)**

*A means of providing for unimpeded wildlife crossing shall be included in the design and construction of structures such as roads and pipelines that are located in areas used by wildlife. Pipeline design shall be based on the best available information and include adequate pipeline elevation, ramping, or burial to minimize disruptions of migratory patterns and other major movements of wildlife. Aboveground pipelines shall be elevated a minimum of 5 feet from the ground to the bottom of the pipe, except at those points where the pipeline intersects a road, pad, or caribou ramp, or is constructed within 100 feet of an existing pipeline that is elevated less than 5 feet. Temporary pipelines (not to exceed 6 months) are exempt from this policy.*

*Intent: In areas used by wildlife, this policy establishes a five-foot minimum pipeline elevation where elevation is the preferred means of providing for unimpeded wildlife crossings. Best available information will be evaluated during project review to determine if pipeline burial, ramping, elevation, or a combination thereof, will be employed.*

Not applicable to the proposed offshore exploration drilling program.

**NSBCMP Policy 2.4.6(f)**

*Development in floodplains, shoreline areas, and offshore areas is required to be sited, designed, and constructed to minimize loss of life or property due to riverine flooding, icings, streambank erosion, oceanic storms, sea waves, ice gouging and override, and shore erosion.*

Not applicable to the proposed offshore exploration drilling program.

**NSBCMP Policy 2.4.6(g)**

*Seismic exploration must be conducted in a manner that minimizes its impact on fish and wildlife.*

Seismic exploration is not included in the proposed exploration drilling program.

# Coastal Project Questionnaire and Certification Statement

All questions must be answered. **If you answer "Yes" to any of the questions, please call that specific department for further instructions to avoid delay in processing your application.** Maps and plan drawings must be included with your packet.

*An incomplete packet will be returned.*

**■ APPLICANT INFORMATION**

<b>1. Shell Offshore Inc.</b> Name of Applicant 3601 C Street, Suite 1334 Address Anchorage/AK/99503 City/State/Zip 907-770-3700 Daytime Phone 907-770-3636 Fax Number	<b>2. AES, Regulatory &amp; Technical Services</b> Agent (or responsible party if other than applicant) 3900 C Street, Suite 601 Address Anchorage/AK/99503 City/State/ZipState                      Zip Code 907-339-6200 Daytime Phone 907-339-5475 Fax Number
<a href="mailto:Susan.Childs@shell.com">Susan.Childs@shell.com</a> E-mail Address	<a href="mailto:Greg.Horner@ascenergy.com">Greg.Horner@ascenergy.com</a> E-mail Address

**■ PROJECT INFORMATION**

**Yes      No**

1. This activity is a:  new project     modification or addition to an existing project  
 If this is a modification, do you currently have any State, federal or local approvals for this activity? .....

*Note: Approval means any form of authorization. If "yes," please list below:*

Approval Type	Approval #	Issuance Date	Expiration Date

2. If this is a modification, was this project reviewed for consistency with Alaska Coastal Management? .....

Previous State I.D. Number: AK \_\_\_\_\_  
 Previous Project Name \_\_\_\_\_

**■ PROJECT DESCRIPTION**

1. Provide a brief description of your entire project and ALL associated facilities and land use conversions.  
Beaufort Sea Outer Continental Shelf Open Water Exploration Drilling Program, using the Shell Kulluk and Frontier Discoverer drilling multiple wells each year between 2007 and 2009. Program supported by helicopters and fixed-wing aircraft, ice management, anchor handling, spill response, fuel, and re-supply vessels.  
 Proposed starting date for project: July 2007    Proposed ending date for project: December 2009

- Attach the following: • a detailed project description, all associated facilities, and land use conversions, etc. (Be specific, including access roads, caretaker facilities, waste disposal sites, etc.); • a project timeline for completion of all major activities; • a site plan depicting project boundary with all proposed actions; • other supporting documentation to facilitate project review. Note: If the project is a modification, identify existing facilities and proposed changes on the site plan.

**■ PROJECT LOCATION**

- Attach a copy of the topographical and vicinity map clearly indicating the location of the project. Please include a map title and scale.
- The project is located in which region (see attached map):  Northern  Southcentral  Southeast  Southwest  within or associated with the Trans-Alaska Pipeline corridor
- Location of project (Include the name of the nearest land feature or body of water.) Beaufort Sea  
 Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_ Meridian \_\_\_\_\_ Latitude/Longitude \_\_\_\_\_ / \_\_\_\_\_  
 USGS Quad Map \_\_\_\_\_
- Is the project located in a coastal district? Yes  No  If yes, identify: \_\_\_\_\_  
*(Coastal districts are a municipality or borough, home rule or first class city, second class with planning, or coastal resource service area.) Note: A coastal district is a participant in the State's consistency review process. It is possible for the State review to be adjusted to accommodate a local permitting public hearing. Early interaction with the district is important; please contact the district representative listed on the attached contact list.*
- Identify the communities closest to your project location: Kaktovik, Nuiqsut, Barrow
- The project is on:  State land or water\*  Federal land  Private land  Municipal land  Mental Health Trust land  
*\*State land can be uplands, tidelands, or submerged lands to 3 miles offshore. See Question #1 in DNR section. Contact the applicable landowner(s) to obtain necessary authorizations.*

**■ DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC) APPROVALS**

- |  | Yes                                 | No                                  |
|--|-------------------------------------|-------------------------------------|
| 1. Will a discharge of wastewater from industrial or commercial operations occur? .....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Will the discharge be connected to an approved sewer system? .....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Will the project include a stormwater collection/discharge system? .....   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Do you intend to construct, install, modify, or use any part of a wastewater (sewage or greywater) disposal system? .....                         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| a) If the answer is yes, will the discharge be 500 gallons per day or greater?.....  | <input type="checkbox"/>            | <input type="checkbox"/>            |
| b) If constructing a domestic wastewater treatment or disposal system, will the system be located within fill material requiring a COE permit? ..... | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

If you answered yes to a) or b), answer the following:

- What is the distance from the bottom of the system to the top of the subsurface water table? \_\_\_\_\_
- How far is any part of the wastewater disposal system from the nearest surface water? \_\_\_\_\_
- Is the surrounding area inundated with water at any time of the year? .....
- How big is the fill area to be used for the absorption system? \_\_\_\_\_

*(Questions 1 & 2 will be used by DEC to determine whether separation distances are being met;*

Questions 3 & 4 relate to the required size of the fill if wetlands are involved.)

- |  | Yes                                 | No                                  |
|--|-------------------------------------|-------------------------------------|
| 3. Will your project require a mixing zone? .....<br><i>(If your wastewater discharge will exceed Alaska water quality standards, you may apply for a mixing zone. If so, please contact DEC to discuss information required under 18 AAC 70.032.)</i>   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. a) Will your project result in construction, operation, or closure of a facility for solid waste disposal?.....<br><i>(Note: Solid waste means drilling wastes, household garbage, refuse, sludge, construction or demolition wastes, industrial solid waste, asbestos, and other discarded, abandoned, or unwanted solid or semi-solid material, whether or not subject to decomposition, originating from any source. Disposal means placement of solid waste on land.)</i> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Will your project result in treatment of solid waste at the site?.....<br><i>(Examples of treatment methods include, but are not limited to: incineration, open burning, baling, and composting.)</i>   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Will your project result in storage or transfer of solid waste at the site?.....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Will the project result in storage of more than 50 tons of materials for reuse, recycling, or resource recovery?.....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Will any sewage solids or biosolids be disposed of or land-applied to the site? .....<br><i>(Sewage solids include wastes that have been removed from a wastewater treatment plant system, such as a septic tank, lagoon dredge, or wastewater treatment sludge that contain no free liquids. Biosolids are the solid, semi-solid, or liquid residues produced during the treatment of domestic septage in a treatment works which are land applied for beneficial use.)</i>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Will your project require application of oil, pesticides, and/or any other broadcast chemicals? .....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. a) Will you have a facility with industrial processes that are designed to process no less than five tons per hour and needs air pollution controls to comply with State emission standards? .....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Will you have stationary or transportable fuel burning equipment, including flares, with a total fuel consumption capacity no less than 50 million Btu/hour? .....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Will you have a facility with incinerators having a total charging capacity of no less than 1,000 pounds per hour?.....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d) Will you have a facility with equipment or processes that are subject to Federal New Source Performance Standards or National Emission Standards for hazardous air pollutants? ....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| i) Will you propose exhaust stack injection?.....  | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e) Will you have a facility with the potential to emit no less than 100 tons per year of any regulated air contaminant?.....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f) Will you have a facility with the potential to emit no less than 10 tons per year of any hazardous air contaminant or 25 tons per year of all hazardous air contaminants?.....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| g) Will you construct or add stationary or transportable fuel burning equipment of no less than 10 million Btu/hour in the City of Unalaska or the City of St. Paul? .....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h) Will you construct or modify in the Port of Anchorage a volatile liquid storage tank with a volume no less than 9,000 barrels, or a volatile liquid loading rack with a design throughput no less than 15 million gallons? .....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| i) Will you be requesting operational or physical limits designed to reduce emissions from an existing facility in an air quality nonattainment area to offset an emission increase from another new or modified facility? .....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 7. Do you plan to develop, construct, install, or alter a public water system?.....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 8. a) Will your project involve the operation of waterborne tank vessels or oil barges that carry crude or non-crude oil as bulk cargo, or the transfer of oil or other petroleum products to or from such a vessel or a pipeline system?.....   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) Will your project require or include onshore or offshore oil facilities with an effective aggregate storage capacity of greater than 5,000 barrels of crude oil   |                                     |                                     |

or greater than 10,000 barrels of non-crude oil?.....

**Yes No**

c) Will you operate facilities on land or water for exploration or production of hydrocarbons? .....

**If you answered "No" to ALL questions in this section, continue to next section.  
If you answered "Yes" to ANY of these questions, contact the DEC office nearest you for information and application forms. Please be advised that all new DEC permits and approvals require a 30-day public notice period. DEC Pesticide permits take effect no sooner than 40 days after the permit is issued.**

Based on your discussion with DEC, please complete the following:

Types of project approvals or permits needed and name of individual you contacted.	Date application submitted
ACMP Consistency Review of MMS Oil Spill Response Plan	December 1, 2006

9. Does your project qualify for a general permit for wastewater or solid waste?.....    
*Note: A general permit is an approval issued by DEC for certain types of routine activities.*

**If you answered "Yes" to any questions in this section and are not applying for DEC permits, indicate reason:**

\_\_\_\_\_ (DEC contact) told me on \_\_\_\_\_ that no DEC approvals are required on this project because \_\_\_\_\_

**Other:** OCS NPDES AKG-28-000 Discharges under jurisdiction of US EPA

**■ DEPARTMENT OF FISH AND GAME (DFG) APPROVALS Yes No**

1. Is your project located in a designated State Game Refuge, Critical Habitat Area or State Game Sanctuary? .....
2. Does your project include construction/operation of a salmon hatchery? .....
3. Does your project affect, or is it related to, a previously permitted salmon hatchery?.....
4. Does your project include construction of an aquatic farm?.....

**If you answered "No" to ALL questions in this section, continue to next section.  
If you answered "Yes" to ANY questions under 1-4, contact the ADF&G Commercial Fisheries Division headquarters for information and application forms**

Based on your discussion with ADF&G, please complete the following:

Types of project approvals or permits needed.	Date application submitted

**If you answered "YES" to any questions in this section and are not applying for ADF&G permits, indicate reason:**

\_\_\_\_\_ (ADF&G contact) told me on \_\_\_\_\_ that no ADF&G approvals are required on this project because \_\_\_\_\_

Other: \_\_\_\_\_

■ DEPARTMENT OF NATURAL RESOURCES (DNR) APPROVALS

Yes No

1. Is the proposed project on State-owned land or water or will you need to cross State-owned land for access? ("Access" includes temporary access for construction purposes. *Note: In addition to State-owned uplands, the State owns almost all land below the ordinary high water line of navigable streams, rivers and lakes, and below the mean high tide line seaward for three miles.*) .....
- a) Is this project for a commercial activity? .....
2. Is the project on Alaska Mental Health Trust land (AMHT) or will you need to cross AMHT land? *Note: Alaska Mental Health Trust land is not considered State land for the purpose of ACMP reviews.* .....
3. Do you plan to dredge or otherwise excavate/remove materials on State-owned land? .....
- Location of dredging site if different than the project site: \_\_\_\_\_  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_ Meridian \_\_\_\_\_ USGS Quad Map \_\_\_\_\_
4. Do you plan to place fill or dredged material on State-owned land? .....
- Location of fill disposal site if other than the project site: \_\_\_\_\_  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_ Meridian \_\_\_\_\_ USGS Quad Map \_\_\_\_\_  
Source is on:  State Land  Federal Land  Private Land  Municipal Land
5. Do you plan to use any of the following State-owned resources: .....
- Timber:** Will you harvest timber? Amount: \_\_\_\_\_
- Materials such as rock, sand or gravel, peat, soil, overburden, etc.:**  
Which material? \_\_\_\_\_ Amount: \_\_\_\_\_  
Location of source:  Project site  Other, describe: \_\_\_\_\_  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_ Meridian \_\_\_\_\_ USGS Quad Map \_\_\_\_\_
6. Do you plan to divert, impound, withdraw, or use any fresh water, except from an existing public water system or roof rain catchment system (regardless of land ownership)? .....
- Amount (maximum daily, not average, in gallons per day): \_\_\_\_\_  
Source: \_\_\_\_\_ Intended Use: \_\_\_\_\_
- If yes, will your project affect the availability of water to anyone holding water rights to that water? .....
7. Do you plan to build or alter a dam (regardless of land ownership)? .....
8. Do you plan to drill a geothermal well (regardless of land ownership)? .....
9. At any one site (regardless of land ownership), do you plan any of the following? .....
- Mine five or more acres over a year's time  
 Mine 50,000 cubic yards or more of materials (rock, sand or gravel, soil, peat, overburden, etc.) over a year's time  
 Have a cumulative unreclaimed mined area of five or more acres
- If yes to any of the above, contact DNR about a reclamation plan.

- If you plan to mine less than the acreage/amount stated above and have a cumulative unreclaimed mined area of less than five acres, do you intend to file a voluntary reclamation plan for approval? .....  **Yes**  **No**
10. Do you plan to explore for or extract coal? .....  **Yes**  **No**
11. a) Will you explore for or produce oil and/or gas?.....  **Yes**  **No**  
 b) Will you conduct surface use activities on an oil and/or gas lease or within an oil and/or gas unit?.....  **Yes**  **No**
12. Will you investigate, remove, or impact historical or archaeological or paleontological resources (anything over 50 years old) on State-owned land?.....  **Yes**  **No**
13. Is the proposed project located within a known geophysical hazard area?.....  **Yes**  **No**  
*Note: 6 AAC 80.900(9) defines geophysical hazard areas as "those areas which present a threat to life or property from geophysical or geological hazards, including flooding, tsunami run-up, storm surge run-up, landslides, snowslides, faults, ice hazards, erosion, and littoral beach process." "known geophysical hazard area" means any area identified in a report or map published by a federal, state, or local agency, or by a geological or engineering consulting firm, or generally known by local knowledge, as having known or potential hazards from geologic, seismic, or hydrologic processes.*
14. Is the proposed project located in a unit of the Alaska State Park System? .....  **Yes**  **No**
15. Will you work in, remove water or material from, or place anything in, a stream, river or lake? (This includes work or activities below the ordinary high water mark or on ice, in the active flood plain, on islands, in or on the face of the banks, or, for streams entering or flowing through tidelands, above the level of mean lower low tide.)  
*Note: If the proposed project is located within a special flood hazard area, a floodplain development permit may be required. Contact the affected city or borough planning department for additional information and a floodplain determination.)* .....  **Yes**  **No**  
 Name of waterbody: \_\_\_\_\_
16. Will you do any of the following:.....  **Yes**  **No**  
*Please indicate below:*
- |  |  |
|--|--|
| <input type="checkbox"/> Build a dam, river training structure, other instream impoundment, or weir  | <input type="checkbox"/> Build a bridge (including an ice bridge)  |
| <input checked="" type="checkbox"/> Use water  | <input type="checkbox"/> Use a stream, lake or waterbody as a road (even when frozen), or cross a stream with tracked or wheeled vehicles, log-dragging or excavation equipment (backhoes, bulldozers, etc.) |
| <input type="checkbox"/> Pump water into or out of stream or lake (including dry channels)   | <input type="checkbox"/> Install a culvert or other drainage structure   |
| <input type="checkbox"/> Divert or alter a natural stream channel  | <input type="checkbox"/> Construct, place, excavate, dispose or remove any material below the ordinary high water of a waterbody   |
| <input type="checkbox"/> Change water flow or the stream channel   | <input type="checkbox"/> Construct a storm water discharge or drain into a waterbody   |
| <input type="checkbox"/> Introduce silt, gravel, rock, petroleum products, debris, brush, trees, chemicals, or other organic/inorganic material, including waste of any type, into water | <input checked="" type="checkbox"/> Place pilings or anchors   |
| <input type="checkbox"/> Alter, stabilize or restore banks of a river, stream or lake (provide number of linear feet affected along the bank(s))   | <input type="checkbox"/> Construct a dock  |
| <input type="checkbox"/> Mine, dig in, or remove material, including woody debris, from beds or banks of a waterbody   | <input type="checkbox"/> Construct a utility line crossing   |
| <input type="checkbox"/> Use explosives in or near a waterbody   | <input type="checkbox"/> Maintain or repair an existing structure  |
|  | <input type="checkbox"/> Use an instream in-water structure not mentioned here   |

**If you answered "No" to ALL questions in this section, continue to next section.  
 If you answered "Yes" to ANY questions under 1-16, contact the Area DNR, office for information and application forms.**

Based on your discussion with DNR, please complete the following:

Types of project approvals or permits needed.	Date application submitted
ACMP Consistency Analysis	8 December 2006

If you answered "Yes" to any questions in this section and are not applying for DNR permits, indicate reason:

\_\_\_\_\_ (DNR contact) told me on \_\_\_\_\_ that no DNR approvals are required on this project because

\_\_\_\_\_

**■ FEDERAL APPROVALS**

**Yes No**

**U.S. Army Corps of Engineers (COE)**

1. Will you dredge or place structures or fills in any of the following:
- tidal (ocean) waters? streams? lakes? wetlands\*? .....
- If yes, have you applied for a COE permit? .....

Date of submittal: **1 December 2006, NWP 8**

Name of COE contact: \_\_\_\_\_

*(Note: Your application for this activity to the COE also serves as application for DEC Water Quality Certification.)*

*\*If you are not certain whether your proposed project is in a wetlands (wetlands include muskegs), contact the COE, Regulatory Branch at 907-753-2712 for a wetlands determination (outside the Anchorage area call toll free 1-800-478-2712)*

**Bureau of Land Management (BLM)**

2. Is the proposed project located on BLM land, or will you need to cross BLM land for access?.....
- If yes, have you applied for a BLM permit or approval? .....

Date of submittal: \_\_\_\_\_

Name of BLM contact: \_\_\_\_\_

**U.S. Coast Guard (USCG)**

3. a) Do you plan to construct a bridge or causeway over tidal (ocean) waters, or navigable rivers, streams or lakes?.....
- b) Does your project involve building an access to an island?.....
- c) Do you plan to site, construct, or operate a deepwater port?.....
- If yes, have you applied for a USCG permit?.....

Date of submittal: \_\_\_\_\_

Name of USCG contact: \_\_\_\_\_

**U.S. Environmental Protection Agency (EPA)**

4. a) Will the proposed project have a discharge to any waters?.....
- b) Will you dispose of sewage sludge (contact EPA at 206-553-1941)? .....
- If you answered yes to a) or b), have you applied for an EPA National Pollution Discharge Elimination System (NPDES) permit? .....

Date of submittal: **1 December 2006**

Name of EPA contact: \_\_\_\_\_

*(Note: For information regarding the need for an NPDES permit, contact EPA at 1-800-424-4372)*

No

c) Will construction of your project expose more than one acre of soil? *(This applies to the total amount of* **Yes**

*land disturbed, even if disturbance is distributed over more than one season, and also applies to areas that are part of a larger common plan of development or sale.)* .....

d) Is your project an industrial facility that will have stormwater discharge directly related to manufacturing, processing, or raw materials storage areas at an industrial plant?.....

If you answered yes to c) or d), your project may require an NPDES Stormwater permit. Contact EPA at 206-553-8399.

**Federal Aviation Administration (FAA)**

5. a) Is your project located within five miles of any public airport?.....

b) Will you have a waste discharge that is likely to decay within 5,000 feet of any public airport? .....

If yes, please contact the Airports Division of the FAA at 907-271-5438.

**Federal Energy Regulatory Commission (FERC)**

6. a) Does the project include any of the following:

1) a non-federal hydroelectric project on any navigable body of water.....

2) a location on federal land (including transmission lines) .....

3) utilization of surplus water from any federal government dam .....

b) Does the project include construction and operation, or abandonment of natural gas pipeline facilities under sections (b) and (c) of the Federal Power Act (FPA)?.....

c) Does the project include construction for physical interconnection of electric transmission facilities under section 202 (b) of the FPA? .....

If you answered yes to any questions under number 6, did you apply for a permit from FERC?.....

Date of submittal: \_\_\_\_\_

Name of FERC contact: \_\_\_\_\_

*(Note: For information, Div. Hydropower-Environment and Engineering contact: Vince Yearek 202-502-6174 or Mike Henry 503-944-6762, 202-502 8700; (for Natural Gas Projects) Division of Pipeline Certificate 202-502-8625; for Alaska projects contact Richard Foley – 202-502-8955)*

**U.S. Forest Service (USFS)**

7. a) Does the proposed project involve construction on USFS land? .....

b) Does the proposed project involve the crossing of USFS land with a water line?.....

If the answer to either question is yes, did you apply for a USFS permit or approval?.....

Date of submittal: \_\_\_\_\_

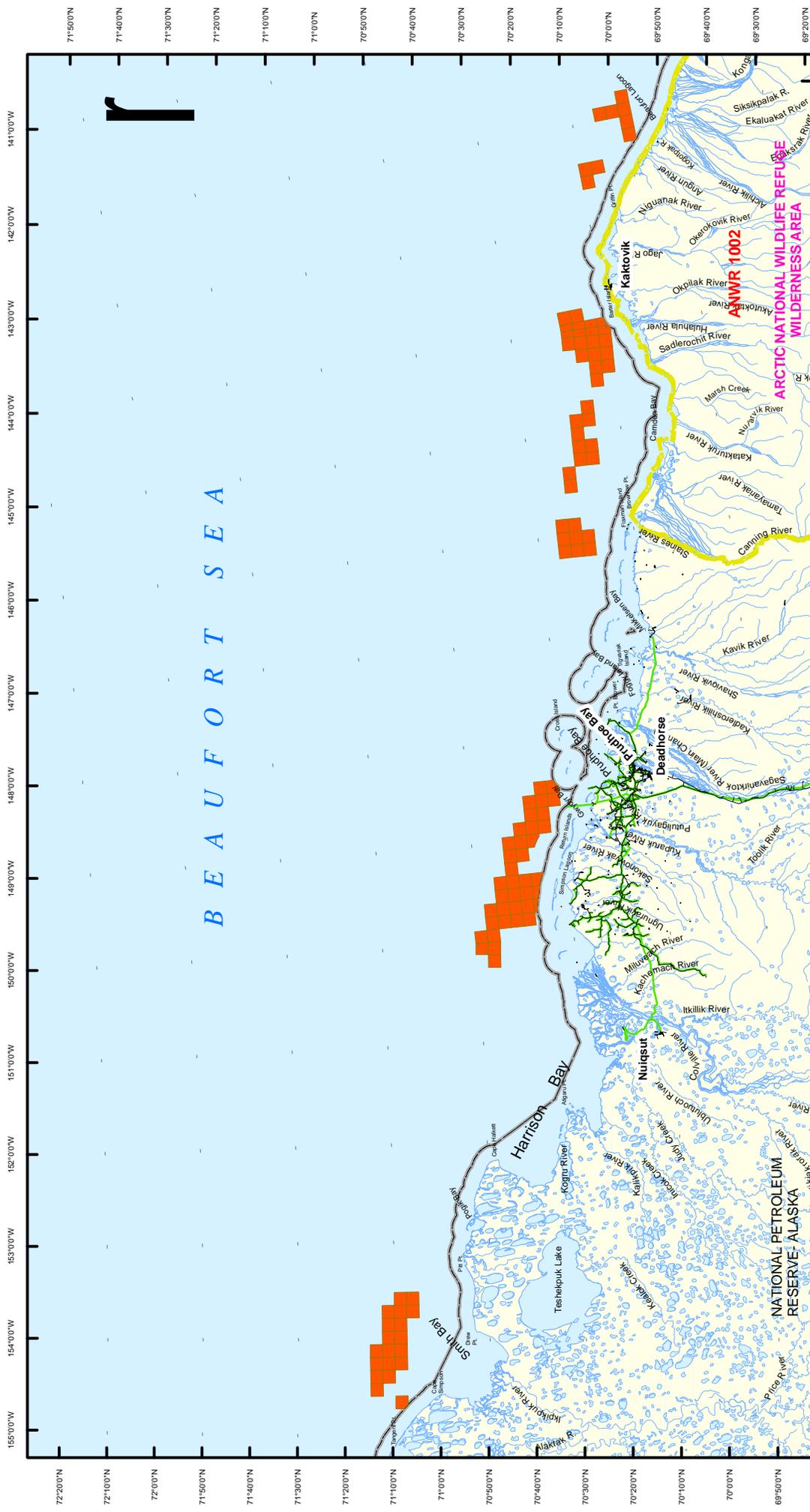
Name of USFS contact: \_\_\_\_\_

8. Have you applied for any other federal permits or authorizations?.....

AGENCY	APPROVAL TYPE	DATE SUBMITTED
Mineral Management Service	Exploration Plan	1 December 2006
National Marine Fisheries Service	IHA Whales & Seals	1 December 2006
US Fish & Wildlife Service	LOA Polar Bear & Pacific Walrus	1 December 2006

**Please be advised that the CPQ identifies permits subject to a consistency review. You may need additional permits from other agencies or the affected city and/or borough government to proceed with your activity.**



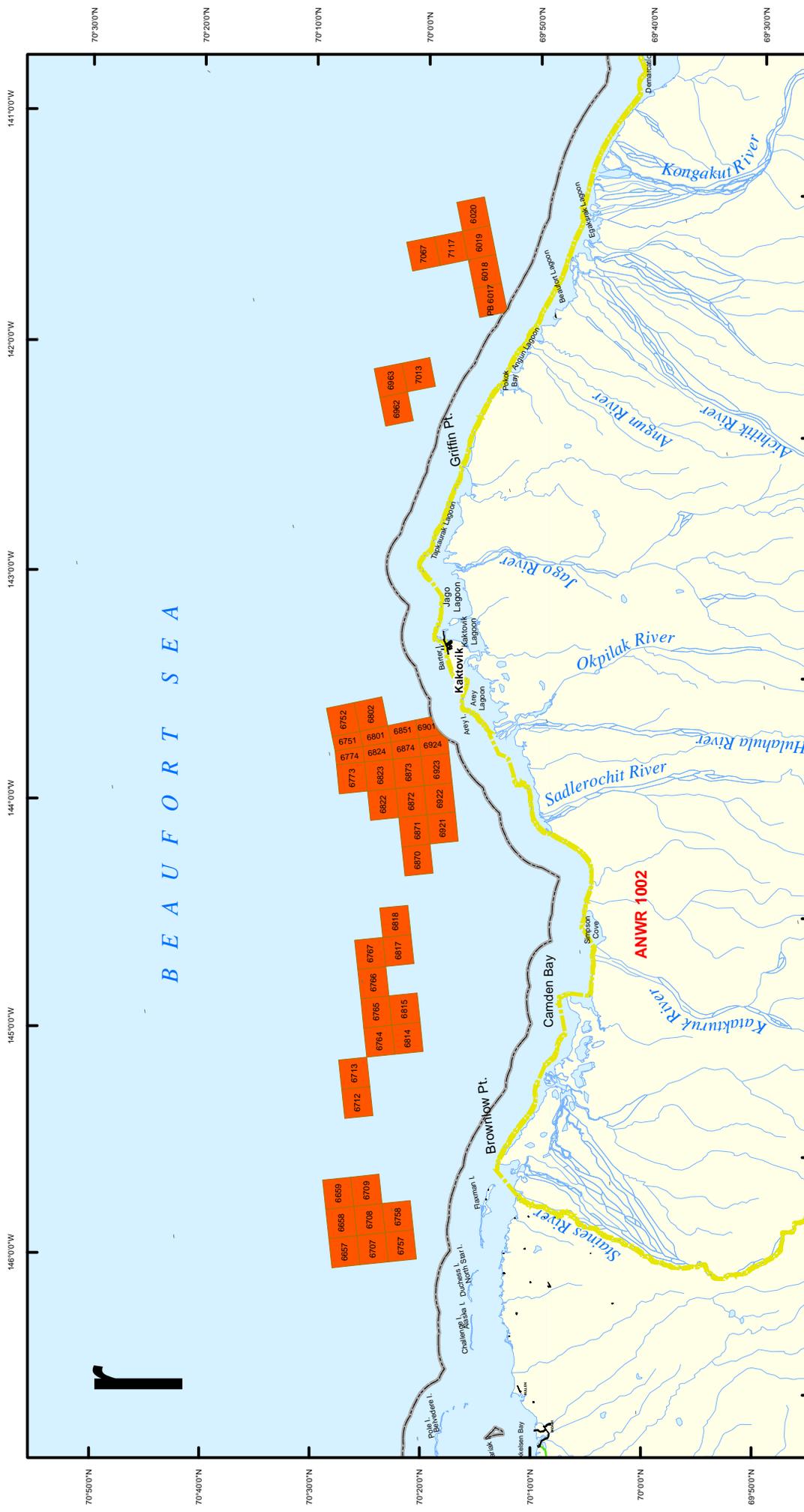


Oil and Gas Leases  
Beaufort Sea



ASRC Energy Services  
Regulatory & Technical Services  
3900 C Street, Suite 601  
Anchorage, Alaska 99503  
Phone (907) 339-5467  
Fax (907) 339-5475  
www.asrcenergy.com

-  Shell Lease Blocks
-  State-Federal Water Boundary
-  Roads
-  Arctic National Wildlife Refuge
-  Pipelines
-  Villages



**SHELL EXPLORATION & PRODUCTION CO.**

Oil and Gas Leases  
Eastern Beaufort Sea

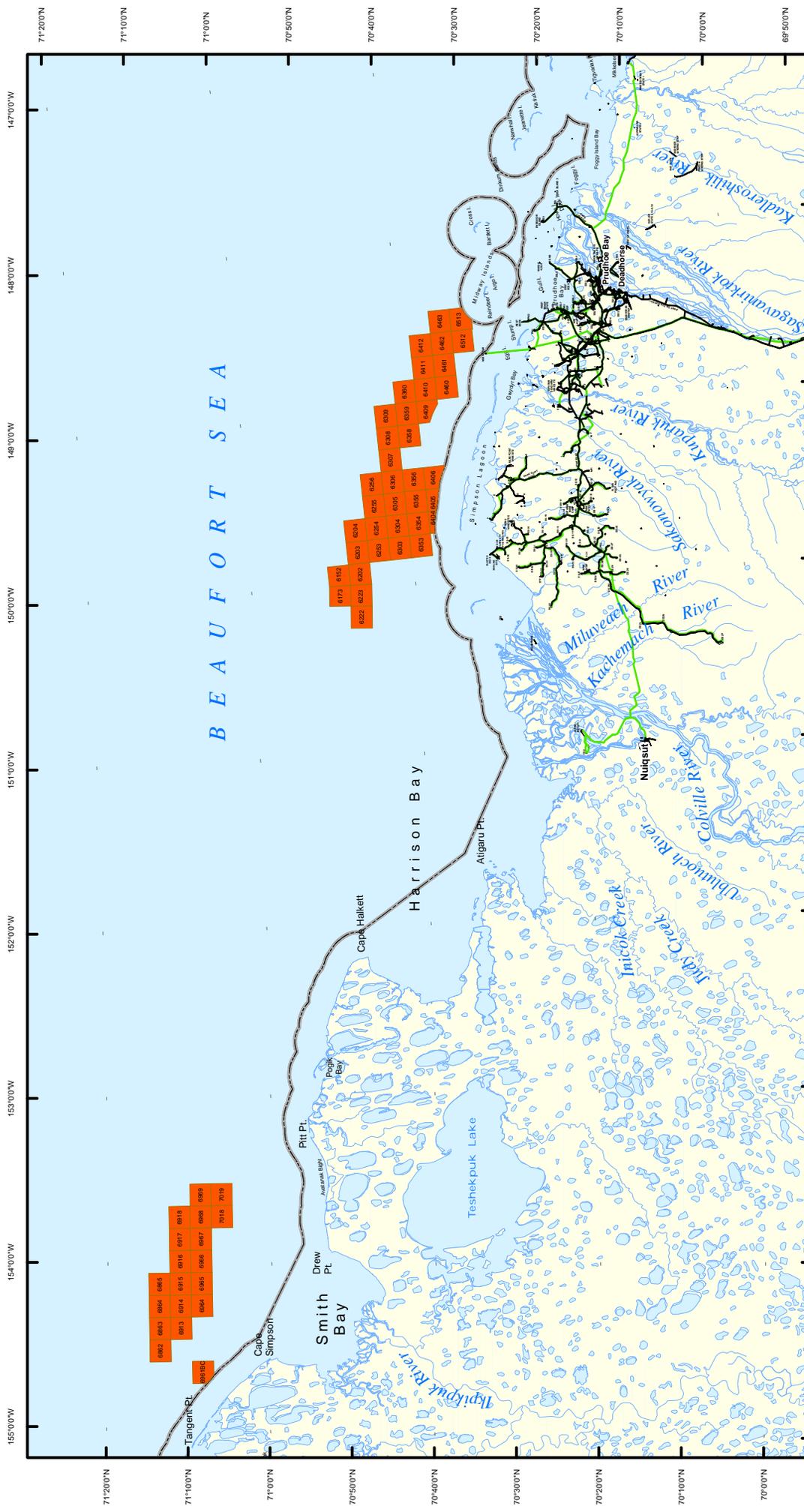
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FIGURE: 2

ASRC Energy Services  
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3900 C Street, Suite 601  
Anchorage, Alaska 99503  
Phone (907) 339-5467  
Fax (907) 339-5475  
www.asroenergy.com

Shell Lease Blocks      State-Federal Water Boundary      Towns

Roads      Pipelines



148°00'W

153°00'W

### Exploration Plan

OCS-Y 1805, Flaxman Island Block 6658  
OCS-Y 1807, Flaxman Island Block 6707  
OCS-Y 1808, Flaxman Island Block 6708  
OCS-Y 1809, Flaxman Island Block 6709  
OCS-Y 1817, Flaxman Island Block 6765  
OCS-Y 1828, Flaxman Island Block 6824  
OCS-Y 1834, Flaxman Island Block 6874  
OCS-Y 1841, Barter Island Block 6801  
OCS-Y 1842, Barter Island Block 6802  
OCS-Y 1845, Barter Island Block 6962  
OCS-Y 1845, Barter Island Block 7117  
OCS-Y 1743, Harrison Bay Block 6222

## **16 Environmental Report**

SOI has completed an analysis of the environment (Environmental Report) in which the proposed Beaufort Sea OCS Drilling Program will be conducted. This analysis is consistent with an environmental analysis as required by 30 CFR Subpart B 250.227. The Environmental Report is attached as Appendix G to this EP.