

**Appendix H**  
**Plan of Cooperation Addendum**

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**Plan of Cooperation Addendum  
Revised Outer Continental Shelf Lease  
Exploration Plan Camden Bay  
Beaufort Sea, Alaska**

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**May 2011**

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## ACRONYMS & ABBREVIATIONS

4MP	Marine Mammal Monitoring and Mitigation Plan
AEWC	Alaska Eskimo Whaling Commission
ASRC	Arctic Slope Regional Corporation
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
BOP	Blowout Preventer
CAA	Conflict Avoidance Agreement
CFR	Code of Federal Regulations
COCP	Critical Operations and Curtailment Plan
Com Centers	Communication and Call Centers
<i>Discoverer</i>	drillship M/V <i>Noble Discoverer</i>
EA	Environmental Assessment
EP	Exploration Plan
EPA	U.S. Department of Interior, Environmental Protection Agency
FONSI	Finding of No Significant Impact National Environmental Policy Act
ft	foot/feet
ICAS	Inupiat Community of the Arctic Slope
IHA	Incidental Harassment Authorization
IMP	Ice Management Plan
in.	inch/inches
km	kilometer/kilometers
LCMF	LCMF Corporation, a division of Ukpeagvik Iñupiat Corporation
LOA	Letter of Authorization
m	meter/meters
mi	statute mile/miles
min	minutes
MMO	Marine Mammal Observer
MMS	Department of the Interior, Minerals Management Service
M/V	Motor Vessel
NMFS	National Marine Fisheries Service
NSB	North Slope Borough

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NWAB	Northwest Arctic Borough
OCS	Outer Continental Shelf
ODPCP	Oil Discharge Prevention and Contingency Plan
OSR	oil spill response
POC	Plan of Cooperation
ROV	remotely operated vehicle
SA	Subsistence Advisor
Shell	Shell Offshore Inc.
UIC	Ukpeagvik Iñupiat Corporation
USFWS	United States Fish and Wildlife Service

## 1.0 INTRODUCTION

Shell Offshore Inc. (Shell) seeks to revise its initial Camden Bay Exploration Plan (EP). The initial Camden Bay EP was submitted to the former U.S. Department of the Interior, Minerals Management Service (MMS) now Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) in May of 2009. In this initial EP, Shell identified two blocks (Flaxman Island 6610 and 6658) of interest in two prospects (Sivulliq and Torpedo), that contained two potential drill sites (Sivulliq N and Torpedo H). The initial Camden Bay EP consisted of an exploration drilling program, which would have been conducted during the 2010 drilling season, using the drillship Motor Vessel (M/V) *Frontier Discoverer* now known as the M/V *Noble Discoverer (Discoverer)*.

The initial Camden Bay EP was deemed submitted by BOEMRE on 10 August 2009. BOEMRE subsequently prepared and distributed an Environmental Assessment (EA) of the proposed exploration drilling program as detailed in the Camden Bay EP, issued a Finding of No Significant Impact (FONSI), and approved the Camden Bay EP on 19 October 2009. Shell was not able to conduct the exploration drilling program in 2010 or 2011 since the exploration activities were postponed when BOEMRE suspended all exploration drilling activities in the Arctic following the Deepwater Horizon incident in the Gulf of Mexico. Pursuant to a revised Camden Bay EP, Shell plans to conduct an exploration drilling program starting in 2012. This revised Camden Bay EP includes the Sivulliq N and Torpedo H location plus two additional wells, Sivulliq G and Torpedo J, which are located in the same area as Sivulliq N and Torpedo H. Shell is proposing to use either the *Discoverer* or the conical drilling unit *Kulluk (Kulluk)* but not both to execute this revised Camden Bay EP. Shell has also committed to collecting select waste streams rather than discharging these waste streams into the ocean. Therefore, Shell has prepared a revised Camden Bay EP and has submitted it to BOEMRE for approval.

BOEMRE Lease Sale Stipulation No. 5 (see Attachment A), requires that all exploration operations be conducted in a manner that prevents unreasonable conflicts between oil and gas exploration activities and subsistence resources and activities. This stipulation also requires adherence to United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regulations, which require an operator to implement a Plan of Cooperation (POC) to mitigate the potential for conflicts between the proposed activity and traditional subsistence activities (50 Code of Federal Regulations [CFR] § 18.124(c)(4) and 50 CFR § 216.104(a)(12)). A POC was prepared and was submitted with the initial Camden Bay EP. The following POC Addendum updates the POC with information regarding proposed changes in proposed exploration drilling program, and documentation of meetings undertaken to specifically to inform the stakeholders of the revised exploration drilling program and obtain their input. The POC Addendum builds upon the previous POC.

The POC identifies the measures that Shell has developed in consultation with North Slope communities and subsistence user groups and will implement during its planned Camden Bay exploration drilling program to minimize any adverse effects on the availability of marine mammals for subsistence uses. In addition, the POC details Shell's communications and consultations with local communities concerning its proposed exploration drilling program beginning in the summer of 2012, potential conflicts with subsistence resources and hunting activities, and means of resolving any such conflicts (50 CFR § 18.128(d) and 50 CFR § 216.104(a) (12) (i), (ii), (iv)). Shell has documented its contacts with North Slope communities, as well as the substance of its communications with subsistence stakeholder groups. Tables summarizing Shell's communications, and responses thereto, are included in Attachment B. This POC may be supplemented, as appropriate, to reflect additional engagements with local subsistence users and any additional or revised mitigation measures that are adopted as a result of those engagements.

Shell's Camden Bay exploration drilling program, planned for the Sivulliq prospect (two drill sites on one lease block) and Torpedo prospect (two drill sites, one on each lease block) in Camden Bay (Figure 1), is set-out in detail in the *Revised Outer Continental Shelf Lease Exploration Plan Camden Bay, Beaufort Sea, Alaska*, and the impacts of the project, as well as the measures Shell will implement to mitigate those impacts, are analyzed in the *Environmental Impact Analysis, Revised Outer Continental Shelf Lease Exploration Plan Camden Bay, Beaufort Sea, Alaska* (EIA). Shell will implement this POC, and the mitigation measures set-forth herein, for its Camden Bay exploration drilling program.

For additional details regarding the exploration drilling program, the reader is directed toward the revised Camden Bay EP and its appendices.

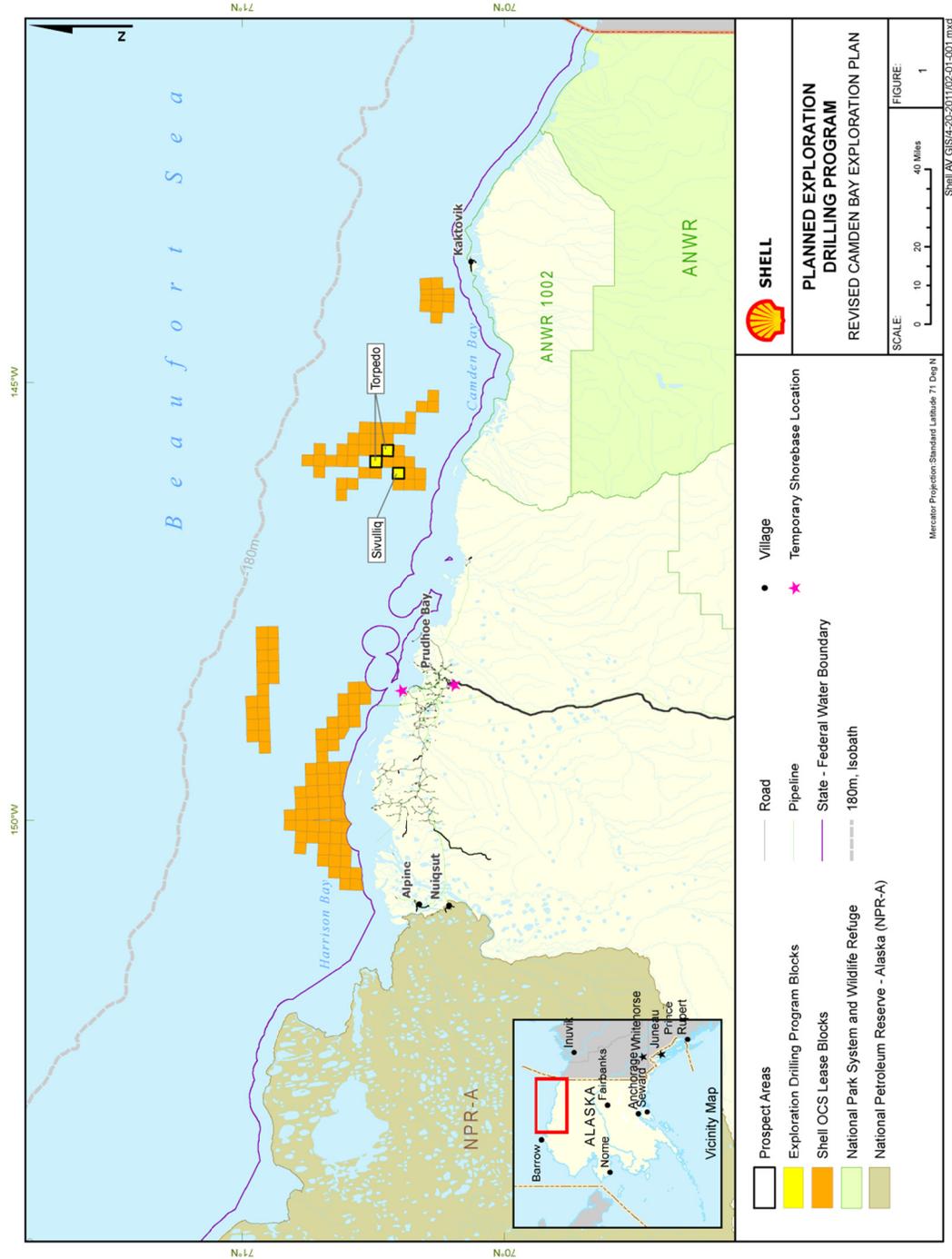
## **2.0 POC LEASE STIPULATION AND REGULATORY REQUIREMENTS**

BOEMRE Lease Sale Stipulation No. 5 (in Attachment A) requires that all exploration operations be conducted in a manner that prevents unreasonable conflicts between oil and gas activities and subsistence resources and subsistence hunting activities of the residents of the North Slope. Specifically, Stipulation No. 5 requires the operator to consult directly with potentially affected North Slope subsistence communities, the North Slope Borough (NSB), and the Alaska Eskimo Whaling Commission (AEWC).

Consultation is needed "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." Stipulation No. 5 also requires the operator to document its contacts and the substance of its communications with subsistence stakeholder groups during the operator's consultation process.

The requirements of Stipulation No. 5 parallel requirements for receipt of a USFWS Letter of Authorization (LOA) and a NMFS Incidental Harassment Authorization (IHA). The LOA and IHA provide authorization for the nonlethal harassment of species protected by the Marine Mammal Protection Act. Both the USFWS and NMFS require an applicant to implement a POC to mitigate the potential for conflicts between the proposed activity and traditional subsistence activities (50 CFR § 18.124(c)(4) and 50 CFR § 216.104(a)(12)). The POC must identify the measures that will be taken to minimize any adverse effects on the availability of marine mammals for subsistence uses. In addition, both USFWS and NMFS require an applicant to communicate and consult with local subsistence communities concerning the proposed activity, potential conflicts with subsistence activities, and means of resolving any such conflicts (50 CFR § 18.128(d) and 50 CFR § 216.104(a) (12) (i), (ii), (iv)).

**Figure 1 Planned Exploration Drilling Program - Revised Camden Bay EP**



### 3.0 MEASURES IN PLACE

The following mitigation measures, plans and programs, are integral to this POC and were developed during consultation with potentially affected subsistence groups, communities, and the NSB. These measures, plans, and programs will be implemented by Shell during its exploration drilling operations in Camden Bay to monitor and mitigate potential impacts to subsistence users and resources. These measures are documented in the following sections:

- Mitigation Measures;
- Exploration Drilling Marine Mammal Monitoring and Mitigation Program (4MP); and
- Interaction and Avoidance Plan for Polar Bear and Pacific Walrus.

#### 3.1 Revised Camden Bay EP Mitigation Measures

The mitigation measures Shell has adopted and will implement during its revised Camden Bay EP exploration drilling operations are listed and discussed below. These mitigation measures reflect Shell's experience conducting exploration activities in Alaska since 2006 and its ongoing consultations with local subsistence communities to better understand their concerns and develop appropriate and effective mitigation measures to address those concerns. Shell's planned mitigation measures have been presented to community leaders and subsistence user groups starting in 2009 and have evolved since in response to comments and concerns expressed during the consultation process. Some mitigation measures appear under more than one sub-heading below, since they are pertinent to more than one "category" of mitigation measures.

##### 3.1.1 Subsistence Mitigation Measures

During each drilling season the *Kulluk* or *Discoverer*, either under tow (*Kulluk*), or by its own propulsion (*Discoverer*) and associated support vessels will transit through the Bering Strait into the Chukchi Sea on or after July 1, arriving on location near Camden Bay approximately July 10. Exploration drilling activities at the drill sites are planned to begin on or about July 10 and run until midnight October 31, with a suspension of all operations beginning August 25 for the Nuiqsut (Cross Island) and Kaktovik subsistence bowhead whale hunts. During the suspension for the whale hunts the drilling vessel and support fleet will leave the Camden Bay project area and move to an area north of latitude 71° 25'N and west of longitude 146° 4'W. Shell will return to resume activities after the subsistence bowhead whale hunts conclude, and depending on ice and weather conditions, continue its exploration activities through 31 October. In addition to the adoption of this project timing restriction, Shell will implement the following additional measures to ensure coordination of its activities with local subsistence users to minimize further the risk of impacting marine mammals and interfering with the subsistence hunt.

Communication, Vessel and Aircraft Travel:

- To minimize impacts on marine mammals and subsistence hunting activities, the drilling vessel and support fleet traversing north through the Bering Strait will transit through the Chukchi Sea along a route that lies offshore of the polynya zone. In the event the transit outside of the polynya zone results in Shell having to break ice (as opposed to managing ice by pushing it out of the way), the drilling vessel and support vessels will enter into the polynya zone far enough so that ice breaking is not necessary. If it is necessary to move into the polynya zone, Shell will notify the local communities of the change in the transit route through the Communication and Call Centers (Com Centers). As soon as the fleet transits past the ice, it will exit the polynya zone and continue a path in the open sea toward the Camden Bay drill sites.

- Vessels underway will alter course to avoid impacts to marine mammals including possible collisions, stampeding, and exclusion from access to critical resources.
- All vessels must maintain cruising speed not to exceed 9 knots while transiting the Beaufort Sea. This measure would reduce the risk of ship-whale collisions.
- Shell has developed a Communication Plan (See Attachment C) and will implement the plan before initiating exploration drilling operations to coordinate activities with local subsistence users as well as Village Whaling Associations in order to minimize the risk of interfering with subsistence hunting activities, and keep current as to the timing and status of the bowhead whale migration, as well as the timing and status of other subsistence hunts. The Communication Plan includes procedures for coordination with Com Centers to be located in coastal villages along the Chukchi and Beaufort Seas during Shell's proposed activities.
- Shell will fund the operation of Com Centers in the coastal villages to enable communications between Shell operations and vessels, local subsistence users, and Subsistence Advisors (SAs), thereby notifying the subsistence community of any vessel transit route changes and avoiding conflicts with subsistence activities.
- Shell will employ local SAs from the Beaufort Sea and Chukchi Sea villages to provide consultation and guidance regarding the whale migration and subsistence hunt. The SAs will use local knowledge (Traditional Knowledge) to gather data on subsistence lifestyle within the community and provide advice on ways to minimize and mitigate potential negative impacts to subsistence resources during the drilling season. Responsibilities include reporting any subsistence concerns or conflicts; coordinating with subsistence users; reporting subsistence-related comments, concerns, and information; and advising how to avoid subsistence conflicts. They will work approximately 8-hours per day and 40-hour weeks. SAs must be from a native village located on the North Slope, speak and understand Inupiaq and must have knowledge of subsistence practices for the area. After the initial recruitment and selection of potential candidates, the hiring process will consist of a two-part interview. During the first interview a full description of the job will be given including the schedule, type of work, conditions, and requirements (including drug testing, orientation, and specialized training). The second interview will assess the candidate's previous employment, subsistence hunting experience, communication skills and ensure they have good social skills. Each SA will be based out of their home village and will be given a SA handbook. The SA handbook will give an overview of the program, program objectives, discusses recruitment, hiring, and certification, and details the SA's responsibilities. The handbook will include several forms that the SA will be using along with a Traditional Knowledge Questionnaire and subsistence use maps. The handbook will provide the SA with the information needed to identify situation they are to be alert for, their responsibilities and their authorities.
- Aircraft shall not operate below 1,500 feet (ft) (457 meters [m]) unless the aircraft is engaged in marine mammal monitoring, approaching, landing or taking off, or unless engaged in providing assistance to a whaler or in poor weather (low ceilings) or any other emergency situations. Aircraft engaged in marine mammal monitoring shall not operate below 1,500 ft (457 m) in areas of active whaling; such areas to be identified through communications with the Com Centers. Except for airplanes engaged in marine mammal monitoring, aircraft shall use a flight path that keeps the aircraft at least 5 miles (mi) (8 kilometers [km]) inland until the aircraft is directly south of its offshore destination, then at that point it shall fly directly north to its destination.
- Shell will also implement non-marine mammal observer (MMO) flight restrictions prohibiting aircraft from flying below 1,500 ft (457 m) altitude (except during takeoffs and landings or in

emergency situations) while over land or sea. This flight will also help avoid disturbance of and collisions with birds.

#### Drilling Operations:

- Shell will collect all drilling mud and cuttings with adhered mud from all well sections below the 26-inch (in.) (20-in. casing) section, as well as treated sanitary waste water, domestic wastes, bilge water and ballast water, and transport them outside the Arctic for proper disposal in an Environmental Protection Agency (EPA) licensed treatment/disposal site. These waste streams will not be discharged to the ocean.
- Drilling mud will be cooled to mitigate any potential permafrost thawing or thermal dissociation of any methane hydrates encountered during exploration drilling if such materials are present at the drill site.
- Drilling mud will be recycled to the extent practicable based on operational considerations (e.g., whether mud properties have deteriorated to the point where they cannot be used further) so that the volume of the mud disposed of at the end of the drilling season is reduced.
- Lighting on the drilling vessel will be shaded and has been replaced with ClearSky lighting. ClearSky lighting is designed to minimize the disorientation and attraction of birds to the lighted drilling vessel to reduce the possibility of a bird collision (*see the Bird Strike Avoidance and Lighting Plan* in Appendix I of the revised Camden Bay EP).

### 3.1.2 Marine Mammal Mitigation Measures

Marine mammal mitigation measures will utilize MMOs to ensure that drilling and support vessel activities do not disturb marine mammal resources and avoid unreasonable interference with the subsistence hunt of those resources. MMOs will be stationed on all drilling and support vessels to monitor the exclusion zone (areas within isopleths of certain sound levels for different species) for marine mammals. For vessels in transit, if a marine mammal is sighted from a vessel within its respective safety radius, the Shell vessel will reduce activity (e.g., reduce speed and/or change course) and noise level to ensure that the animal is not exposed to sound above their respective safety levels. Full activity will not be resumed until all marine mammals are outside of the exclusion zone and there are no other marine mammals likely to enter the exclusion zone. Regular overflight surveys and support vessel surveys for marine mammals will be conducted to further monitor prospect areas. Shell will also implement flight restrictions prohibiting aircraft from flying below 1,500 ft (457 m) altitude (except during takeoffs and landings or in emergency situations), further reducing the likelihood of impacts.

Anchored vessels will remain at anchor and continue ongoing operations if approached by a marine mammal. The anchored vessel will remain in place and continue ongoing operations to avoid possibly causing avoidance behavior by suddenly changing noise conditions.

For complete MMO protocol refer to the 4MP (Appendix D of the revised Camden Bay EP).

In addition to the use of MMOs, Shell will implement the following measures to avoid disturbances to marine mammals that potentially could rise to the level of incidental take, and ensure coordination of its activities with local subsistence users to minimize further the risk of impacting marine mammals and interfering with the subsistence hunt.

### Vessel and Aircraft Travel:

- A 4MP protocol;
- Aircraft will not operate within 1,500 ft (457 m) of whale groups;
- Aircraft and vessels will not operate within 0.5 mi (0.8 km) of walruses or polar bears when observed on land or ice;
- When within 900 ft (274 m) of marine mammals, vessels will reduce speed, avoid separating members from a group and avoid multiple course changes;
- Vessel speed to be reduced during inclement weather conditions in order to avoid collisions with marine mammals;
- Aircraft shall not operate below 1,500 ft (457 m) unless the aircraft is engaged in marine mammal monitoring, approaching, landing or taking off, in poor weather (fog or low ceilings) in an emergency situation. Aircraft engaged in marine mammal monitoring shall not operate below 1,500 ft (457 m) in areas of active whaling; such areas to be identified through communications with the Com Centers. Except for airplanes engaged in marine mammal monitoring, aircraft shall use a flight path that keeps the aircraft at least 5 mi (8 km) inland until the aircraft is south of its offshore destination, then at that point it shall fly directly north through the Mary Sachs Entrance to its destination. Shell reserves the option to use an alternative flight route in the event that transit through the Mary Sachs Entrance is unsafe due to weather, other environmental conditions, or in the event of an emergency;
- Aircraft and vessels will not operate within 0.5 mi (0.8 km) of walrus or polar bears when observed on land or ice;
- Shell will also implement non-MMO flight restrictions prohibiting aircraft from flying within 1,000 ft (300 m) of marine mammals or below 1,500 ft (457 m) altitude (except during takeoffs and landings or in emergency situations) while over land or sea. This flight will also help avoid disturbance of and collisions with birds;
- The *Kulluk* or *Discoverer* and support vessels will enter the Chukchi Sea through the Bering Strait on or after July 1, minimizing effects on marine mammals and birds that frequent open leads and minimizing effects on spring and early summer bowhead whale hunting. All transit will be coordinated and collaborated with Com Centers as practicable.

### Drilling Operations:

- Exploration drilling activities at the Sivulliq or Torpedo drill sites are planned to begin on or about 10 July following transit into the Beaufort Sea and run through 31 October, with a suspension of all operations beginning August 25 for the Nuiqsut (Cross Island) and Kaktovik subsistence bowhead whale hunts. During the suspension for the whale hunts the drilling vessel and support fleet will leave the Camden Bay project area and move to an area north of latitude 71° 25'N and west of longitude 146° 4'W. Should the drilling vessel or support vessels anchor during the suspension, none will anchor in known environmentally, or archaeologically sensitive areas. Shell will return to resume activities after the subsistence bowhead whale hunts conclude. Exploration drilling activities will be concluded by October 31, depending on ice and weather; and
- During zero-offset vertical seismic profiling (see Section 2.4 of the revised Camden Bay EP Environmental Impact Analysis for details) airguns will be ramped up slowly to warn cetaceans and pinnipeds in the vicinity of the airguns and provide time for them to leave the area and avoid potential injury or impairment of their hearing abilities. A ramp up to the required level will not

begin until there has been a minimum of 30 minutes (min) of observation of the safety zone by MMOs to assure that no marine mammals are present. The safety zone is the extent of the 180 decibel (dB) radius for cetaceans and 190 dB for pinnipeds. The entire safety zone must be visible during the 30 min lead-in to an array ramp up. If a marine mammal(s) is sighted within the safety zone during the 30 min watch prior to ramp up, ramp up will be delayed until the marine mammal(s) is sighted outside of the safety zone or the animal(s) is not sighted for at least 15-30 min: 15 min for small odontocetes and pinnipeds, or 30 min for baleen whales and large odontocetes.

### **3.1.3 Mitigation Measures for Operations and Oil Spill Prevention and Response**

BOEMRE has concluded that the probability of a large oil spill occurring during an exploration drilling project is extremely remote. Nevertheless, as required by both federal and state regulations, Shell has developed and will implement a comprehensive Oil Discharge Prevention and Contingency Plan (ODPCP) during its exploration drilling operations, in addition to other operations plans including the Ice Management Plan (IMP) and Critical Operations and Curtailment Plan (COCP). The ODPCP will be reviewed and approved by both state and federal regulators to ensure that Shell has the spill response resources necessary to respond to any spill that might occur. While the probability of a spill is very remote, Shell will dedicate all necessary resources to respond to any spill that might occur. In addition to the maintenance and implementation of its ODPCP, Shell will implement the following additional measures to further minimize the risk of a spill that might impact marine mammals and interfere with the subsistence hunt:

- The drilling fleet transit route will avoid known fragile ecosystems, including the Ledyard Bay Critical Habitat Unit, and will include coordination through Com Centers.
- Shell has developed and will implement an IMP to ensure real-time ice and weather forecasting to identify conditions that might put operations at risk and modify its activities accordingly. The IMP also contains ice threat classification levels depending on the time available to suspend exploration drilling operations, secure the well and escape from advancing hazardous ice (see the IMP Appendix K of the revised Camden Bay EP, for details regarding Shell's IMP).
- Ice management will involve preferentially redirecting, rather than breaking, ice floes while the floes are well away from the drill site (see the IMP Appendix K of the revised Camden Bay EP).
- Real time ice and weather forecasting will be from the Shell Ice and Weather Advisory Center.
- Shell has developed and will implement a COCP, which establishes protocols to be followed in the event potential hazards, including ice, are identified in the vicinity of the exploration drilling operations (e.g., ice floes, inclement weather, etc.). Like the IMP, the COCP threat classifications are based on the time available to prepare the well and escape the location. The COCP also contains provisions for not initiating certain critical operations if there is insufficient time available before the arrival of the hazard at the drill site (see the COCP Appendix J of the revised Camden Bay EP).
- Shell has engineered each of its exploration wells (including hole sizing, mud program, casing design, casing cementing depth, hole sizing, and wellhead equipment, etc.) specifically to minimize the risk of uncontrolled flows from the wellbore due to casing or other equipment failures.

- The primary OSR vessel will be on standby at all times when drilling into zones containing oil to ensure that oil spill response capability is available within one hour, if needed.
- Shell will deploy an OSR fleet that is capable of collecting oil on the water up to the calculated Worst Case Discharge flowrate of a blowout in the unlikely event that one should occur. The primary OSR vessel will be on standby when drilling into zones containing oil to ensure that oil spill response capability is available within one hour, if needed. The remainder of the OSR fleet will be fully engaged within 72 hours.
- A polar bear culvert trap has been constructed in anticipation of oil spill response (OSR) needs and will be deployed near Point Thomson or Kaktovik prior to exploration drilling;
- The blowout prevention program will be enhanced through the use of two sets of blind/shear rams, increased frequency of blowout preventor (BOP) performance tests from 14 days to 7 days, a remotely operated vehicle control panel on the seafloor with sufficient pressured water-based fluid to operate the BOP, a containment system that includes treatment and flaring capabilities, capping stack equipment located on one of the ice management vessels and a fully-designed relief well drilling plan and provisions for a second rig (*Kulluk* or *Discoverer*) to be available to drill a relief well if the primary drilling vessel is disabled and not capable of drilling its own relief well.
- In addition to the OSR fleet, oil spill containment equipment will be available for use in the unlikely event of a blowout. The barge will be centrally located in the Beaufort Sea and supported by an Invader Class Tug and possibly an anchor handler. The containment equipment will be designed for conditions found in the Arctic including ice and cold temperatures. This equipment will also be designed for maximum reliability, ease of operation, flexibility and robustness so it could be used for a variety of blowout situations.
- Capping stack equipment will be stored aboard one of the ice management vessels and will be available for immediate deployment in the unlikely event of a blowout. Capping stack equipment consist of subsea devices assembled to provide direct surface intervention capability with the following priorities:
  - Attaching a device or series of devices to the well to affect a seal capable of withstanding the maximum anticipated wellhead pressure and closing the assembly to completely seal the well against further flows (commonly called “capping and killing”)
  - Attaching a device or series of devices to the well and diverting flow to surface vessel(s) equipped for separation and disposal of hydrocarbons (commonly called “capping and diverting”)
- Pre-booming is required for all fuel transfers between vessels (the Fuel Transfer Plan is located in Appendix M of the revised Camden Bay EP).

### **3.2 Exploration Drilling Marine Mammal Monitoring and Mitigation Program**

Under 50 CFR 218.108, NMFS requires any holder of an IHA in Arctic waters to complete monitoring and reporting requirements established in the IHA and published regulations. Additionally, the USFWS requires all applicants for LOAs to conduct monitoring under 50 CFR 18.128. To meet these requirements, a 4MP was developed for the Camden Bay exploration drilling program. The 4MP is designed to avoid, minimize, and mitigate potential adverse impacts to marine mammal subsistence resources that may result from offshore activities. The 4MP for Shell’s exploration drilling activities has

been sent to NMFS with the Camden Bay exploration drilling IHA application and is included in Appendix D of the revised Camden Bay EP. The 4MP for the exploration drilling program includes the following provisions:

- MMOs – MMOs will be required to support the transit through the Chukchi Sea and all operations in the Beaufort Sea. The shipboard MMO program is designed to provide real time observations of marine mammals by trained observers from individual vessels to document exposure to industrial activities. MMOs will be present on vessels to monitor for the presence of marine mammals, assist maintenance of marine mammal safety radii around vessels, monitor and record avoidance or exposure behaviors, and communicate with the Com Centers and local subsistence hunters by marine radio. The experience and abilities of the NSB residents in sighting and identifying marine mammals during Shell's exploration programs contributed significantly to the success of Shell's previous monitoring and mitigation program.
- Manned Aerial Program – Aerial surveys to collect information in the vicinity of Camden Bay regarding distribution and abundance of bowhead whales and other marine mammals.
- Acoustic Recorders – A combination of recorder technology, such as pop-up or Directional Autonomous Seafloor Acoustic Recorder buoys, to monitor wide area distribution of marine mammals, specifically bowhead whales, in relation to Shell's proposed activities.
- Sound Modeling – of vessels utilized for exploration drilling activities.
- Sound Source Verification – Field measurement sound propagation profiles of the drilling vessel and support vessels utilized by Shell in the exploration drilling programs in Camden Bay.

### **3.3 Interaction and Avoidance Plan for Polar Bear and Pacific Walrus**

Shell has prepared an interaction and avoidance plan for polar bear and Pacific walrus to meet the requirements of 50 CFR 18.128 for holders of LOAs issued by the USFWS. The plan outlines procedures for mitigating potential impacts to polar bear and Pacific walrus, as well as monitoring program requirements. A copy of the plan for Shell's exploration drilling activities outlined in the revised Camden Bay EP has been sent to the USFWS. Measures in the plan which cover all Shell activities are summarized here.

- New polar bear dens, identified by industry, local residents, and regulatory agencies are reported annually and will be incorporated into project plans to ensure both bear and worker safety. Bear dens discovered during operations will be reported to the designated USFWS representatives.
- Trash will be collected and separated so that all food-associated waste is placed in an appropriate bear-resistant dumpster.
- Hazardous wastes, if generated, would be transported off-site for disposal at an approved facility.
- Employees will be prohibited from directly feeding animals or deliberately leaving food for polar bears and other animals.
- If a polar bear is observed, all on-site personnel will be alerted so that work activities can be altered or stopped to avoid interactions. Personnel will contact the designated USFWS representative whenever a polar bear is sighted. Depending on the distance between the polar bear and the activities this may mean retreating to the safety of vehicles, emergency shelter, temporary buildings, or other safe haven.

- When a polar bear is observed, a designated bear watcher will be assigned to ensure continuous monitoring of the bear's movements. The On-Scene Shell Supervisor will be contacted before any bear hazing activities. Trained polar bear hazers and bear guards will support field operations.
- Exploration Drilling and support vessels will observe a 0.5 mi (0.8 km) exclusion zone around any bear observed on land or ice during transit.
- Aircraft will maintain 1,500 ft (457 m) minimum altitude within, 0.5 mi (0.8 km) of a hauled-out polar bear or Pacific walrus.
- Ice management mitigation measures, such as "ice scouting," will use radar, satellite imagery, observations from support vessels by trained Ice Pilots, and reconnaissance flights to monitor ice movement in areas near the prospect area prior to and during exploration drilling operations. These measures will provide an early warning of bears in the vicinity so appropriate measures can be taken to limit polar bear/human interference.
- Polar bear monitoring, reporting, and survey activities will be conducted in accordance with those outlined in 76 Federal Register 13454.
- Exploration drilling and support vessels will observe a 0.5 mi (0.8 km) exclusion zone around Pacific walrus observed on land or ice during transit.

## **4.0 AFFECTED SUBSISTENCE COMMUNITY MEETINGS**

Affected subsistence communities that were consulted regarding Shell's planned exploration drilling activities in Camden Bay include: Barrow, Nuiqsut, and Kaktovik. Shell conducted POC meetings in the Chukchi Sea communities of Wainwright, Point Lay and Point Hope to discuss a planned Chukchi Sea exploration drilling program, while also describing the mobilization of Camden Bay exploration drilling program vessels through the Chukchi Sea to and from the Beaufort Sea. Additionally, Shell met with subsistence groups including the AEWG, the Nanuq Commission, the Eskimo Walrus Committee, the Beluga Commission, the Ice Seal Commission, and the Native Village of Barrow, and presented information regarding the proposed activities to the NSB and Northwest Arctic Borough (NWAB) Assemblies, and NSB and NWAB Planning Commissions. Several one-on-one meetings were also held throughout the villages.

### **4.1 Consultation with Community Leaders**

Beginning in early January 2009, Shell held one-on-one meetings with representatives from the NSB, subsistence-user group leadership, the Inupiat Community of the Arctic Slope (ICAS), and Village Whaling Captain Association representatives. These meetings took place at the convenience of the community leaders and in various venues. Meetings were held starting on 12 January 2009 and have continued to date. Shell's primary purpose in holding individual meetings was to inform key leaders, prior to the public meetings, so that they would be prepared to give appropriate feedback on planned activities.

## 4.2 Community Meeting Summaries

Table 4.2-1 provides a list of public meetings attended by Shell while developing this POC, beginning in 2009 through 2011. Attachment B presents sign-in sheets and presentation materials used at the POC meetings held in 2011 to present the revised Camden Bay EP. Comment analysis tables for numerous meetings held during 2011 summarize feedback from the communities on Shell's planned activities beginning in the summer of 2012. These comments analysis tables, with responses from Shell and corresponding mitigation measures pertinent to the comment are included in Attachment B.

**Table 4.2-1 Meeting Dates and Locations**

2009	Meeting Location	Meeting Attendees – Position
12-13 January	Barrow	Harry Brower – Whaling Captain, AEWG Chairman and Assistant Director of the NSB Wildlife Department Edward Itta – Whaling Captain and Mayor of the NSB Eugene Brower – Whaling Captain, Arctic Slope Regional Corporation (ASRC) Board Member and President of the NSB Assembly Anthony Edwardsen – Whaling Captain and President of Ukpeagvik Iñupiat Corporation (UIC) Andy Mack – NSB Assistant to the Mayor Harold Curran – NSB Chief Administrative Officer Robert Suydam – NSB Wildlife Department Biologist Cheryl Rosa – NSB Wildlife Department Research Biologist Craig George – NSB Wildlife Department Biologist
21 January	Point Hope	Steve Oommituk - Mayor of Point Hope
21 January	Barrow	Charlie Hopson – Whaling Captain Representative, LCMF Incorporated employee, and AEWG alternate commissioner in Barrow Adeline Hopson – NSB Assembly Member Deano Oleuman – NSB Assembly Member
21 January	Barrow	Roy Koonuk – AEWG Commissioner and Point Hope Whaling Captain
21 January	Barrow	George Edwardson – Inupiat Community of the Arctic Slope(ICAS) President Juanita Smith – ICAS Natural Resource Director
21 January	Point Hope	Rex Rock Sr.; NSB Assembly Member and Tikiqag Representative
27 January	Kotzebue	Jackie Hill – Maniilaq Association Representative
27 January	Kotzebue	Martha Whiting – Mayor of the NWAB
27 January	Kotzebue	NWAB Assembly Meeting
27 January	Kotzebue	Chuck Greene, EJ Doll Garoutte, Walter Sampson, Gladys Pungowiyi - NANA Representatives
27 January	Kaktovik	Fenton Rexford NSB Assembly Member and Native Village of Kaktovik Executive Director
28 January	Kaktovik	Carla Sims – Kaktovik Vice Mayor
2 February	Barrow	NSB Assembly Workshop
2 February	Barrow	Plan of Cooperation Public Meeting
3 February	Barrow	Janice Meadows – AEWG Executive Director
3 February	Barrow	Vera Williams – Native Village of Barrow Realty Director Joseph Sage – Native Village of Barrow Wildlife Director
5 February	Kaktovik	Plan of Cooperation Public Meeting
4-5 March	Anchorage	AEWG 2009 Conflict Avoidance Agreement (CAA) Negotiations
24 March	Point Hope	Plan of Cooperation Public Meeting
25 March	Kotzebue	Plan of Cooperation Public Meeting
25 March	Kotzebue	NSB/NWAB Joint Planning Commission Meeting
26 March	Wainwright	Plan of Cooperation Public Meeting
2 April	Barrow	ICAS Monthly Meeting
20 April	Barrow	Native Village of Barrow Meeting
22 April	Point Lay	Plan of Cooperation Public Meeting

**Table 4.2-1 Meeting Dates and Locations**

23 April	Kivalina	Community Meeting
<b>2010</b>	<b>Meeting Location</b>	<b>Meeting Attendees – Position</b>
14 January	Barrow	ICAS Monthly Meeting
15 January	Anchorage	Eugene Brower – Barrow Whaling Captains Association President
22 January	Anchorage	George Oleuman – Deputy Mayor Eugene Brower – NSB Assembly President Taquilik Hepa – NSB Wildlife Director Bessie O'Rouke – NSB Law Department Marvin Olson – NSB Director Public Works Dan Forster – NSB Planning Director
24 February	Barrow	Plan of Cooperation Public Meeting
25 February	Point Hope	Plan of Cooperation Public Meeting
26 February	Kaktovik	Plan of Cooperation Public Meeting
26 February	Barrow	Edward Itta – Mayor of the NSB
1 March	Wainwright	Plan of Cooperation Public Meeting
2 March	Kotzebue	Community Meeting
5 March	Point Hope	Plan of Cooperation Public Meeting
1 April	Point Lay	Plan of Cooperation Public Meeting
8 April	Barrow	Martha Whiting – Mayor of the NWAB Walter Sampson – NWAB Assembly President
30 April	Barrow	Edward Itta – Mayor of the NSB
1 June	Barrow	NSB Assembly Meeting
1 June	Point Lay	Point Lay Community Meeting
2 June	Barrow	Barrow Community Meeting
3 June	Kaktovik	Kaktovik Community Meeting
8 June	Barrow	Utqiagvik Agviqsuqtit Aganangich Meeting
8 June	Barrow	Barrow Whaling Captains Association Meeting
24 June	Barrow	NWAB/NSB Joint Planning Commission Meeting
19 July	Barrow	Edward Itta – Mayor of the NSB
3 August	Barrow	NSB Assembly Meeting
7 September	Barrow	NSB Assembly Meeting
23 September	Nuiqsut	Nuiqsut Whaling Captains Association Meeting
23 September	Nuiqsut	Plan of Cooperation Public Meeting
24 September	Barrow	Plan of Cooperation Public Meeting
25 September	Kaktovik	Plan of Cooperation Public Meeting
8 November	Anchorage	Alaska Beluga Whale Committee Meeting
6 December	Anchorage	Alaska Beluga Whale Committee Members Ice Seal Committee Members Alaska Nanuuq Commission Members Eskimo Walrus Commission Members
<b>2011</b>	<b>Meeting Location</b>	<b>Meeting Attendees – Position</b>
27 January	Barrow	Barrow Whaling Captains Association Meeting
27 February – 2 March	Dutch Harbor	Edith Vorderstrasse – UIC UMIQA Consulting Division Manager Ray Koonuk, Sr. – Whaling Captain Christopher Oktollik – Whaling Captain John Long, Jr. – Native Village of Point Hope Council Member Joseph Frankson – Whaling Captain Franklin Sage – Native Village of Point Hope Council Member Caroline Cannon – Native Village of Point Hope President Luke Koonook, Sr. – Elder and Whaling Captain Alfred Oomittuk – City of Point Hope Council Member Bessie Kowunna – Shell Point Hope Community Liaison, Tikigaq Board Member, and City Council Member Theodore Frankson – Native Village of Point Hope Staff Aaron Oktollik – AEWK Commissioner for Point Hope and Whaling Captain Carl Brower – Whaling Captain

**Table 4.2-1 Meeting Dates and Locations**

		Dora Leavitt – City of Nuiqsut Council Member Thomas Napageak – City of Nuiqsut Mayor and Whaling Captain Edgar Kagak – Wainwright Health Board Oliver Peetook – City of Wainwright Vice Mayor Sandra Peetook – City of Wainwright Council Member Joseph Kaleak – AEWK Commissioner for Kaktovik and Whaling Captain George Tagarook – NSB Fire Department Fire Chief and Whaling Captain
28 February – 3 March	Dutch Harbor	William Tracey, Sr. – NSB Planning Commissioner and Point Lay Fire Chief Marie Tracey – NSB Village Liaison Emma Ahvakana – NWAB Assembly Member Enoch Mitchell – Noatak IRA President Ronald Moto, Sr. – Nana Board Member and City of Deering Mayor Cole Schaeffer – Kikiktagruk Inupiat Corporation President & CEO Nellie Wesley – NWAB Planning Commission EPA Assistant Anthony Edwardsen – UIC President/CEO Troy Izat – Tikigaq Corporation COO Susan Harvey – Harvey Consulting, LLC and Consultant to the NSB Thomas Nageak – Barrow Whaling Captain and NSB Cultural Resource Specialist Roy Nageak Jr. – Native Village of Barrow Natural Resource Technician Michael Shults – Barrow City Council Mary Sage –North Slope Borough School District (NSBSD) School Board Member, Iisagvik College Board Member, and Native Village of Barrow Council Member Robert Suydam – NSB Wildlife Biologist Qaiyaan Opie – ICAS Environmental Director Lloyd Leavitt – City of Barrow Council Member Robert Nageak – City of Barrow Council Member Johnny Aiken – AEWK Executive Director Harry Brower, Jr. – AEWK Chairman
7-8 March	Anchorage	Arctic Open Water Meeting
21 March	Barrow	Plan of Cooperation Public Meeting
22 March	Kaktovik	Plan of Cooperation Public Meeting
23 March	Wainwright	Plan of Cooperation Public Meeting
23 March	Wainwright	Rossmann Peetok – AEWK Commissioner for Wainwright Jason Ahmaogak – Wainwright Whaling Captain
24 March	Nuiqsut	Plan of Cooperation Public Meeting
24 March	Nuiqsut	Isaac Nukapigak – AEWK Commissioner for Nuiqsut Herbert Ipalook – President of the Nuiqsut Whaling Captains Association Thomas Napageak – Nuiqsut Whaling Captain Carl Brower – Nuiqsut Whaling Captain Eli Nukapigak – Nuiqsut Whaling Captain
25 March	Point Lay	Plan of Cooperation Public Meeting
28 March	Point Hope	Plan of Cooperation Public Meeting
29 March	Kiana	Community Meeting
30 March	Kotzebue	Community Meeting
31 March	Kivalina	Community Meeting
2 April	Nome	Vera Metcalf – Eskimo Walrus Commission Charlie Johnson – Alaska Nanuq Commission
5 April	Barrow	NSB Assembly Meeting
7 April	Kotzebue/ Anchorage (Teleconference)	Willie Goodwin – Alaska Beluga Whale Committee
8 April	Anchorage	John Goodwin – Ice Seal Committee
15 April	Anchorage	Vera Metcalf – Eskimo Walrus Commission
25 April	Savoonga	Community Meeting
26 April	Shishmaref	Community Meeting
27 April	Gambell	Community Meeting

### **4.3 Project Information and Presentation Materials**

To present consistent and concise information regarding the planned exploration drilling program, Shell prepared presentation materials (listed below and attached in Attachment B) for meetings with stakeholders across the North Slope.

#### **Camden Bay Exploration Drilling Presentation Summary**

- Summary of Shells Science Accomplishments
- Summary and explanation of Shell's revised Camden Bay EP
- Summary of Shell's drilling discharge mitigated program
- Summary of Shell's proposed drill sites for the revised Camden Bay EP

### **4.4 Meeting Process**

Prior to Shell's public meetings, communities were contacted to determine an optimal meeting date and subsequently notified by public advertising. Meeting notices and flyers were sent to each city council and Native council for public posting well in advance of the meeting dates. Public notices were also published in the *Arctic Sounder*, the local paper that serves most of the North Slope region, and announcements were made on the local radio station KBRW 680 AM and KOTZ 720 AM.

Community meetings are designed to allow the public to voice their concerns and speak one-on-one with project experts. Kiosks manned by subject matter experts were set-up in communities where this form of communication is deemed acceptable to facilitate direct communications, and comment cards supplied for each station. Comment cards with a Shell return address were left with the communities and a toll free phone number and e-mail address were provided in case questions arose after the meeting. Food was provided and door prizes were given out to create a friendly environment and encourage attendance. Every effort was made to ensure the maximum amount of feedback was received and that all questions were addressed and answered to the fullest extent possible.

After each meeting, comment cards were gathered and compiled in a comment analysis table. A separate comment analysis table was completed for each POC meeting, the NSB Assembly Meeting, and each community meeting. These tables are included in Attachment B.

## **5.0 CONCLUSION**

As discussed in Section 4, and detailed in the documents attached here, stakeholders have been provided information relevant to the project and have been invited to offer input on potential environmental, social, and health impacts, as well as and proposed mitigation and conflict avoidance measures. Shell is seeking alignment with stakeholders and, where appropriate and feasible, will incorporate the recommendations of stakeholders into project planning.

As required by applicable lease sale stipulations, as well as anticipated IHA and LOA stipulations, Shell will continue to meet with the affected subsistence communities and users to resolve any conflicts and to notify the communities of any changes in its planned operations. This POC may be supplemented, as appropriate, to reflect additional engagements with local subsistence users and any additional or revised mitigation measures that are adopted as a result of those engagements. Shell respectfully submits that this POC meets its obligations under Stipulation No. 5, as well as the POC requirements established by applicable USFWS and NMFS regulations (50 CFR 216.104, 50 CFR 18.124 and 128).

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**Attachment A**  
**OCS Lease Sale 195 and 202 Stipulations**

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# ***Leasing Activities Information***



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

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## **Lease Stipulations Oil and Gas Lease Sale 195 Beaufort Sea March 30, 2005**

- Stipulation No. 1. Protection of Biological Resources
- Stipulation No. 2. Orientation Program
- Stipulation No. 3. Transportation of Hydrocarbons
- Stipulation No. 4. Industry Site-Specific Bowhead Whale-Monitoring Program
- Stipulation No. 5. Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence-Harvesting Activities
- Stipulation No. 6. Pre-Booming Requirements for Fuel Transfers
- Stipulation No. 7. Lighting of Lease Structures to Minimize Effects to Spectacled and Steller's Eider

***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.

Based on any surveys that the RS/FO may require of the lessee or on other information available to the RS/FO on special biological resources, the RS/FO may require the lessee to:

- (1) Relocate the site of operations;
- (2) Establish to the satisfaction of the RS/FO, on the basis of a site-specific survey, either that such operations will not have a significant adverse effect upon the resource identified or that a special biological resource does not exist;
- (3) Operate during those periods of time, as established by the RS/FO, that do not adversely affect the biological resources; and/or
- (4) Modify operations to ensure that significant biological populations or habitats deserving protection are not adversely affected.

If any area of biological significance should be discovered during the conduct of any operations on the lease, the lessee shall immediately report such findings to the RS/FO and make every

reasonable effort to preserve and protect the biological resource from damage until the RS/FO has given the lessee direction with respect to its protection.

The lessee shall submit all data obtained in the course of biological surveys to the RS/FO with the locational information for drilling or other activity. The lessee may take no action that might affect the biological populations or habitats surveyed until the RS/FO provides written directions to the lessee with regard to permissible actions.

**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.

The program shall be attended at least once a year by all personnel involved in onsite exploration or development and production activities (including personnel of the lessee's agents, contractors, and subcontractors) and all supervisory and managerial personnel involved in lease activities of the lessee and its agents, contractors, and subcontractors.

The lessee shall maintain a record of all personnel who attend the program onsite for so long as the site is active, not to exceed 5 years. This record shall include the name and date(s) of attendance of each attendee.

**Stipulation No. 3. Transportation of Hydrocarbons.** Pipelines will be required: (a) if pipeline rights-of-way can be determined and obtained; (b) if laying such pipelines is technologically feasible and environmentally preferable; and (c) if, in the opinion of the lessor, pipelines can be laid without net social loss, taking into account any incremental costs of pipelines over alternative methods of transportation and any incremental benefits in the form of increased environmental protection or reduced multiple-use conflicts. The lessor specifically reserves the right to require that any pipeline used for transporting production to shore be placed in certain designated management areas. In selecting the means of transportation, consideration will be given to recommendations of any advisory groups and Federal, state, and local governments and industry.

Following the development of sufficient pipeline capacity, no crude oil production will be transported by surface vessel from offshore production sites, except in the case of an emergency. Determinations as to emergency conditions and appropriate responses to these conditions will be made by the RS/FO.

**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.

The monitoring program will be designed to assess when bowhead whales are present in the vicinity of lease operations and the extent of behavioral effects on bowhead whales due to these operations. In designing the program, lessees must consider the potential scope and extent of effects that the type of operation could have on bowhead whales. Experiences relayed by subsistence hunters indicate that, depending on the type of operations, some whales demonstrate avoidance behavior at distances of up to 35 miles. The program must also provide for the following:

- (1) Recording and reporting information on sighting of other marine mammals and the extent of behavioral effects due to operations;
- (2) Inviting an AEWC or NSB representative to participate in the monitoring program as an observer;
- (3) Coordinating the monitoring logistics beforehand with the MMS Bowhead Whale Aerial Survey Project (BWASP);
- (4) Submitting daily monitoring results to the MMS BWASP;
- (5) Submitting a draft report on the results of the monitoring program to the RS/FO within 60 days following the completion of the operation (the RS/FO will distribute this draft report to the AEWC, the NSB, the State of Alaska, and the National Oceanic and Atmospheric Administration-Fisheries [NOAA]); and
- (6) Submitting a final report on the results of the monitoring program to the RS/FO (the final report will include a discussion of the results of the peer review of the draft report and the RS/FO will distribute this report to the AEWC, the NSB, the State of Alaska, and the NOAA Fisheries).

Lessees will be required to fund an independent peer review of a proposed monitoring plan and the draft report on the results of the monitoring program. This peer review will consist of independent reviewers who have knowledge and experience in statistics, monitoring marine mammal behavior, the type and extent of the proposed operations, and an awareness of traditional knowledge. The peer reviewers will be selected by the RS/FO from experts recommended by the NSB, the AEWC, industry, NOAA Fisheries, and MMS. The results of these peer reviews will be provided to the RS/FO for consideration in final approval of the monitoring program and the final report, with copies to the NSB, AEWC, and the State of Alaska.

In the event the lessee is seeking a Letter of Authorization (LOA) or Incidental Harassment Authorization (IHA) for incidental take from the NOAA Fisheries, the monitoring program and review process required under the LOA or IHA may satisfy the requirements of this stipulation.

Lessees must advise the RS/FO when it is seeking an LOA or IHA in lieu of meeting the requirements of this stipulation and provide the RS/FO with copies of all pertinent submittals and resulting correspondence. The RS/FO will coordinate with the NOAA Fisheries and advise the lessee if the LOA or IHA will meet these requirements.

This stipulation applies to the following blocks for the time periods listed and will remain in effect until termination or modification by the Department of the Interior, after consultation with the NOAA Fisheries and the NSB.

**Spring Migration Area: April 1 through June 15**

**OPD: NR 05-01, Dease Inlet.** Blocks included:

6102-6111	6302-6321	6508-6523	6717-6723
6152-6167	6354-6371	6560-6573	
6202-6220	6404-6423	6610-6623	
6252-6270	6455-6473	6659-6673	

**OPD: NR 05-02, Harrison Bay North:** Blocks included:

6401-6404	6501-6506	6601-6609	6701-6716
6451-6454	6551-6556	6651-6659	

**Central Fall Migration Area: September 1 through October 31**

**OPD: NR 05-01, Dease Inlet.** Blocks included:

6102-6111	6354-6371	6610-6623	6856-6873
6152-6167	6404-6423	6659-6673	6908-6923
6202-6220	6455-6473	6706-6723	6960-6973
6252-6270	6508-6523	6756-6773	7011-7023
6302-6321	6560-6573	6806-6823	7062-7073
			7112-7123

**OPD: NR 05-02, Harrison Bay North.** Blocks included:

6401-6404	6601-6609	6801-6818	7001-7023
6451-6454	6651-6659	6851-6868	7051-7073
6501-6506	6701-6716	6901-6923	7101-7123
6551-6556	6751-6766	6951-6973	

**OPD: NR 05-03, Teshekpuk.** Blocks included:

6015-6024	6067-6072
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**OPD: NR 05-04, Harrison Bay.** Blocks included:

6001-6023	6157-6173	6309-6324	6461-6471
6052-6073	6208-6223	6360-6374	6513-6519
6106-6123	6258-6274	6410-6424	6565-6566

**OPD: NR 06-01, Beechey Point North.** Blocks included:

6901-6911	6951-6962	7001-7012	7051-7062
			7101-7113

**OPD: NR 06-03, Beechey Point.** Blocks included:

6002-6014	6202-6220	6401-6424	6618-6624
6052-6064	6251-6274	6456-6474	6671-6674
6102-6114	6301-6324	6509-6524	6722-6724
6152-6169	6351-6374	6568-6574	6773

**OPD: NR 06-04, Flaxman Island.** Blocks included:

6301-6303	6451-6459	6601-6609	6751-6759
6351-6359	6501-6509	6651-6659	6802-6809
6401-6409	6551-6559	6701-6709	6856-6859

**Eastern Fall Migration: August 1 through October 31**

**OPD: NR 06-04, Flaxman Island.** Blocks included:

6360-6364	6560-6574	6760-6774	6961-6974
6410-6424	6610-6624	6810-6824	7013-7022
6460-6474	6660-6674	6860-6874	7066-7070
6510-6524	6710-6724	6910-6924	7118-7119

**OPD: NR 07-03, Barter Island.** Blocks included:

6401-6405	6601-6605	6801-6803	7012-7013
6451-6455	6651-6655	6851-6853	7062-7067
6501-6505	6701-6705	6901-6903	7113-7117
6551-6555	6751-6753	6962-6963	

**OPD: NR 07-05, Demarcation Point.** Blocks included:

6016-6022	6118-6125	6221-6226	6324-6326
6067-6072	6169-6175	6273-6276	

**OPD: NR 07-06, Mackenzie Canyon.** Blocks included:

6201	6251	6301	6351
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**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 North Slope Borough (NSB), and the Alaska Eskimo Whaling Commission (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.

A discussion of resolutions reached during this consultation process and plans for continued consultation shall be included in the exploration plan or the development and production plan. In particular, the lessee shall show in the plan how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Lessees shall also include a discussion of multiple or simultaneous operations, such as ice management and seismic activities, that can be expected to occur during operations in order to more accurately assess the potential for any cumulative effects. Communities, individuals, and other entities who were involved in the consultation shall be identified in the plan. The RS/FO shall send a copy of the exploration plan or development and production plan (including associated oil-spill contingency plans) to the directly affected communities and the AEWG at the time they are submitted to the MMS to allow concurrent review and comment as part of the plan approval process.

In the event no agreement is reached between the parties, the lessee, the AEWG, the NSB, the National Oceanic and Atmospheric Administration - Fisheries (NOAA), or any of the subsistence communities that could be affected directly by the proposed activity may request that the RS/FO assemble a group consisting of representatives from the subsistence communities, AEWG, NSB, NOAA Fisheries, and the lessee(s) to specifically address the conflict and attempt to resolve the issues before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests. Upon request, the RS/FO will assemble this group if the RS/FO determines such a meeting is warranted and relevant before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests.

The lessee shall notify the RS/FO of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. Lease-related use will be restricted when the RS/FO determines it is necessary to prevent unreasonable conflicts with local subsistence hunting activities.

In enforcing this stipulation, the RS/FO will work with other agencies and the public to assure that potential conflicts are identified and efforts are taken to avoid these conflicts.

Subsistence whaling activities occur generally during the following periods:

**August to October:** Kaktovik whalers use the area circumscribed from Anderson Point in Camden Bay to a point 30 kilometers north of Barter Island to Humphrey Point east of Barter Island. Nuiqsut whalers use an area extending from a line northward of the Nechelik Channel of the Colville River to Flaxman Island, seaward of the Barrier Islands.

**September to October:** Barrow hunters use the area circumscribed by a western boundary extending approximately 15 kilometers west of Barrow, a northern boundary 50 kilometers

north of Barrow, then southeastward to a point about 50 kilometers off Cooper Island, with an eastern boundary on the east side of Dease Inlet. Occasional use may extend eastward as far as Cape Halkett.

**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).

**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 (FWS) on October 22, 2002, and FWS'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. Measures to be considered include but need not be limited to the following:

- Shading and/or light fixture placement to direct light inward and downward to living and work structures while minimizing light radiating upward and outward;
- Types of lights;
- Adjustment of the number and intensity of lights as needed during specific activities.
- Dark paint colors for selected surfaces;
- Low reflecting finishes or coverings for selected surfaces; and
- Facility or equipment configuration.

Lessees are encouraged to consider other technical, operational and management approaches to reduce outward light radiation that could be applied to their specific facility and operation.

If further information on bird avoidance measures becomes available that suggests modification to this lighting protocol is warranted under the Endangered Species Act to implement the reasonable and prudent measures of the Biological Opinion, MMS will issue further requirements, based on guidance from the FWS. Lessees will be required to adhere to such modifications of this protocol. The MMS will promptly notify lessees of any changes to lighting required under this stipulation.

These requirements apply to all new and existing Outer Continental Shelf oil and gas leases issued between the 156<sup>0</sup> W longitude and 146<sup>0</sup> W longitude for activities conducted between May 1 and October 31. The MMS encourages operators to consider such measures in areas to the east of 146<sup>0</sup> W longitude because occasional sightings of eiders that are now listed have been made there and because such measures could reduce the potential for collisions of other, non-ESA listed migratory birds that are protected under the Migratory Bird Treaty Act.

Nothing in this protocol is intended to reduce personnel safety or prevent compliance with other regulatory requirements (e.g. U.S. Coast Guard or Department of Occupational Safety and Health) for marking or lighting of equipment and work areas.

Lessees are required to report spectacled and/or Steller's eiders injured or killed through collisions with lease structures to the Fairbanks Fish and Wildlife Field Office, Endangered Species Branch, Fairbanks, Alaska at (907) 456-0499. We recommend that you call that office for instruction on the handling and disposal of the injured or dead bird.

Lessees must provide MMS with a written statement of measures that will be or that have been taken to meet the objective of this stipulation. Lessees must also include a plan for recording and reporting bird strikes that occur during approved activities to the MMS. This information must be included with an Exploration Plan when the EP is submitted for regulatory review and approval pursuant to 30 CFR 250.203. Lessees are encouraged to discuss their proposed measures in a pre-submittal meeting with the MMS and FWS.

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# Leasing Activities Information



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

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## Lease Stipulations

### Oil and Gas Lease Sale 202 Beaufort Sea April 18, 2007

- Stipulation No. 1. Protection of Biological Resources
- Stipulation No. 2. Orientation Program
- Stipulation No. 3. Transportation of Hydrocarbons
- Stipulation No. 4. Industry Site-Specific Bowhead Whale-Monitoring Program
- Stipulation No. 5. Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence-Harvesting Activities
- Stipulation No. 6. Pre-Booming Requirements for Fuel Transfers
- Stipulation No. 7. Lighting of Lease Structures to Minimize Effects to Spectacled and Steller's Eider

**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.

Based on any surveys that the RS/FO may require of the lessee or on other information available to the RS/FO on special biological resources, the RS/FO may require the lessee to:

- (1) Relocate the site of operations;
- (2) Establish to the satisfaction of the RS/FO, on the basis of a site-specific survey, either that such operations will not have a significant adverse effect upon the resource identified or that a special biological resource does not exist;
- (3) Operate during those periods of time, as established by the RS/FO, that do not adversely affect the biological resources; and/or
- (4) Modify operations to ensure that significant biological populations or habitats deserving protection are not adversely affected.

If any area of biological significance should be discovered during the conduct of any operations on the lease, the lessee shall immediately report such findings to the RS/FO and make every reasonable effort to preserve and protect the biological resource from damage until the RS/FO has given the lessee direction with respect to its protection.

The lessee shall submit all data obtained in the course of biological surveys to the RS/FO with the locational information for drilling or other activity. The lessee may take no action that might affect the biological populations or habitats surveyed until the RS/FO provides written directions to the lessee with regard to permissible actions.

**Stipulation No. 2. Orientation Program.** The lessee shall include in any exploration or development and production plans submitted under 30 CFR 250.201 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.

The program shall be attended at least once a year by all personnel involved in onsite exploration or development and production activities (including personnel of the lessee's agents, contractors, and subcontractors) and all supervisory and managerial personnel involved in lease activities of the lessee and its agents, contractors, and subcontractors.

The lessee shall maintain a record of all personnel who attend the program onsite for so long as the site is active, not to exceed 5 years. This record shall include the name and date(s) of attendance of each attendee.

**Stipulation No. 3. Transportation of Hydrocarbons.** Pipelines will be required: (a) if pipeline rights-of-way can be determined and obtained; (b) if laying such pipelines is technologically feasible and environmentally preferable; and (c) if, in the opinion of the lessor, pipelines can be laid without net social loss, taking into account any incremental costs of pipelines over alternative methods of transportation and any incremental benefits in the form of increased environmental protection or reduced multiple-use conflicts. The lessor specifically reserves the right to require that any pipeline used for transporting production to shore be placed in certain designated management areas. In selecting the means of transportation, consideration will be given to recommendations of any advisory groups and Federal, state, and local governments and industry.

Following the development of sufficient pipeline capacity, no crude oil production will be transported by surface vessel from offshore production sites, except in the case of an emergency. Determinations as to emergency conditions and appropriate responses to these conditions will be made by the RS/FO.

**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.

The monitoring program will be designed to assess when bowhead whales are present in the vicinity of lease operations and the extent of behavioral effects on bowhead whales due to these operations. In designing the program, lessees must consider the potential scope and extent of effects that the type of operation could have on bowhead whales. Experiences relayed by subsistence hunters indicate that, depending on the type of operations, some whales demonstrate avoidance behavior at distances of up to 35 miles. The program must also provide for the following:

- (1) Recording and reporting information on sighting of other marine mammals and the extent of behavioral effects due to operations;
- (2) Inviting an AEWC or NSB representative to participate in the monitoring program as an observer;
- (3) Coordinating the monitoring logistics beforehand with the MMS Bowhead Whale Aerial Survey Project (BWASP);
- (4) Submitting daily monitoring results to the MMS BWASP;
- (5) Submitting a draft report on the results of the monitoring program to the RS/FO within 60 days following the completion of the operation (the RS/FO will distribute this draft report to the AEWC, the NSB, the State of Alaska, and the National Oceanic and Atmospheric Administration-Fisheries [NOAA]); and
- (6) Submitting a final report on the results of the monitoring program to the RS/FO (the final report will include a discussion of the results of the peer review of the draft report and the RS/FO will distribute this report to the AEWC, the NSB, the State of Alaska, and the NOAA Fisheries).

Lessees will be required to fund an independent peer review of a proposed monitoring plan and the draft report on the results of the monitoring program. This peer review will consist of independent reviewers who have knowledge and experience in statistics, monitoring marine mammal behavior, the type and extent of the proposed operations, and an awareness of traditional knowledge. The peer reviewers will be selected by the RS/FO from experts recommended by the NSB, the AEWC, industry, NOAA Fisheries, and MMS. The results of

these peer reviews will be provided to the RS/FO for consideration in final approval of the monitoring program and the final report, with copies to the NSB, AEWC, and the State of Alaska.

In the event the lessee is seeking a Letter of Authorization (LOA) or Incidental Harassment Authorization (IHA) for incidental take from the NOAA Fisheries, the monitoring program and review process required under the LOA or IHA may satisfy the requirements of this stipulation. Lessees must advise the RS/FO when it is seeking an LOA or IHA in lieu of meeting the requirements of this stipulation and provide the RS/FO with copies of all pertinent submittals and resulting correspondence. The RS/FO will coordinate with the NOAA Fisheries and advise the lessee if the LOA or IHA will meet these requirements.

This stipulation applies to the following blocks for the time periods listed and will remain in effect until termination or modification by the Department of the Interior, after consultation with the NOAA Fisheries and the NSB.

**Spring Migration Area: April 1 through June 15**

**OPD: NR 05-01, Dease Inlet. Blocks included:**

6102-6111	6302-6321	6508-6523	6717-6723
6152-6167	6354-6371	6560-6573	
6202-6220	6404-6423	6610-6623	
6252-6270	6455-6473	6659-6673	

**OPD: NR 05-02, Harrison Bay North. Blocks included:**

6401-6404	6501-6506	6601-6609	6701-6716
6451-6454	6551-6556	6651-6659	

**Central Fall Migration Area: September 1 through October 31**

**OPD: NR 05-01, Dease Inlet. Blocks included:**

6102-6111	6354-6371	6610-6623	6856-6873
6152-6167	6404-6423	6659-6673	6908-6923
6202-6220	6455-6473	6706-6723	6960-6973
6252-6270	6508-6523	6756-6773	7011-7023
6302-6321	6560-6573	6806-6823	7062-7073
			7112-7123

**OPD: NR 05-02, Harrison Bay North. Blocks included:**

6401-6404	6601-6609	6801-6818	7001-7023
6451-6454	6651-6659	6851-6868	7051-7073
6501-6506	6701-6716	6901-6923	7101-7123
6551-6556	6751-6766	6951-6973	

**OPD: NR 05-03, Teshekpuk. Blocks included:**

6015-6024                      6067-6072

**OPD: NR 05-04, Harrison Bay. Blocks included:**

6001-6023	6157-6173	6309-6324	6461-6471
6052-6073	6208-6223	6360-6374	6513-6519
6106-6123	6258-6274	6410-6424	6565-6566

**OPD: NR 06-01, Beechey Point North. Blocks included:**

6901-6911	6951-6962	7001-7012	7051-7062
			7101-7113

**OPD: NR 06-03, Beechey Point. Blocks included:**

6002-6014	6202-6220	6401-6424	6618-6624
6052-6064	6251-6274	6456-6474	6671-6674
6102-6114	6301-6324	6509-6524	6722-6724
6152-6169	6351-6374	6568-6574	6773

**OPD: NR 06-04, Flaxman Island. Blocks included:**

6301-6303	6451-6459	6601-6609	6751-6759
6351-6359	6501-6509	6651-6659	6802-6809
6401-6409	6551-6559	6701-6709	6856-6859

**Eastern Fall Migration: August 1 through October 31**

**OPD: NR 06-04, Flaxman Island. Blocks included:**

6360-6364	6560-6574	6760-6774	6961-6974
6410-6424	6610-6624	6810-6824	7013-7022
6460-6474	6660-6674	6860-6874	7066-7070
6510-6524	6710-6724	6910-6924	7118-7119

**OPD: NR 07-03, Barter Island. Blocks included:**

6401-6405	6601-6605	6801-6803	7012-7013
6451-6455	6651-6655	6851-6853	7062-7067
6501-6505	6701-6705	6901-6903	7113-7117
6551-6555	6751-6753	6962-6963	

**OPD: NR 07-05, Demarcation Point. Blocks included:**

6016-6022	6118-6125	6221-6226	6324-6326
6067-6072	6169-6175	6273-6276	

**OPD: NR 07-06, Mackenzie Canyon. Blocks included:**

6201	6251	6301	6351
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**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 North Slope Borough (NSB), and the Alaska Eskimo Whaling Commission (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.

A discussion of resolutions reached during this consultation process and plans for continued consultation shall be included in the exploration plan or the development and production plan. In particular, the lessee shall show in the plan how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Lessees shall also include a discussion of multiple or simultaneous operations, such as ice management and seismic activities, that can be expected to occur during operations in order to more accurately assess the potential for any cumulative affects. Communities, individuals, and other entities who were involved in the consultation shall be identified in the plan. The RS/FO shall send a copy of the exploration plan or development and production plan (including associated oil-spill contingency plans) to the directly affected communities and the AEWC at the time they are submitted to the MMS to allow concurrent review and comment as part of the plan approval process.

In the event no agreement is reached between the parties, the lessee, the AEWC, the NSB, the National Oceanic and Atmospheric Administration - Fisheries (NOAA), or any of the subsistence communities that could be affected directly by the proposed activity may request that the RS/FO assemble a group consisting of representatives from the subsistence communities, AEWC, NSB, NOAA Fisheries, and the lessee(s) to specifically address the conflict and attempt to resolve the issues before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests. Upon request, the RS/FO will assemble this group if the RS/FO determines such a meeting is warranted and relevant before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests.

The lessee shall notify the RS/FO of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. Lease-related use will be restricted when the RS/FO determines it is necessary to prevent unreasonable conflicts with local subsistence hunting activities.

In enforcing this stipulation, the RS/FO will work with other agencies and the public to assure that potential conflicts are identified and efforts are taken to avoid these conflicts.

Subsistence whaling activities occur generally during the following periods:

**August to October:** Kaktovik whalers use the area circumscribed from Anderson Point in Camden Bay to a point 30 kilometers north of Barter Island to Humphrey Point east of Barter Island. Nuiqsut whalers use an area extending from a line northward of the Nechelik Channel of the Colville River to Flaxman Island, seaward of the Barrier Islands.

**September to October:** Barrow hunters use the area circumscribed by a western boundary extending approximately 15 kilometers west of Barrow, a northern boundary 50 kilometers north of Barrow, then southeastward to a point about 50 kilometers off Cooper Island, with an eastern boundary on the east side of Dease Inlet. Occasional use may extend eastward as far as Cape Halkett.

**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).

**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 (FWS) on October 22, 2002, and FWS'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. Measures to be considered include but need not be limited to the following:

- Shading and/or light fixture placement to direct light inward and downward to living and work structures while minimizing light radiating upward and outward;
- Types of lights;
- Adjustment of the number and intensity of lights as needed during specific activities.
- Dark paint colors for selected surfaces;

- Low reflecting finishes or coverings for selected surfaces; and
- Facility or equipment configuration.

Lessees are encouraged to consider other technical, operational and management approaches to reduce outward light radiation that could be applied to their specific facility and operation.

If further information on bird avoidance measures becomes available that suggests modification to this lighting protocol is warranted under the Endangered Species Act to implement the reasonable and prudent measures of the Biological Opinion, MMS will issue further requirements, based on guidance from the FWS. Lessees will be required to adhere to such modifications of this protocol. The MMS will promptly notify lessees of any changes to lighting required under this stipulation.

These requirements apply to all new and existing Outer Continental Shelf oil and gas leases issued between the 156° W longitude and 146° W longitude for activities conducted between May 1 and October 31. The MMS encourages operators to consider such measures in areas to the east of 146° W longitude because occasional sightings of eiders that are now listed have been made there and because such measures could reduce the potential for collisions of other, non-ESA listed migratory birds that are protected under the Migratory Bird Treaty Act.

Nothing in this protocol is intended to reduce personnel safety or prevent compliance with other regulatory requirements (e.g. U.S. Coast Guard or Occupational Safety and Health Administration) for marking or lighting of equipment and work areas.

Lessees are required to report spectacled and/or Steller's eiders injured or killed through collisions with lease structures to the Fairbanks Fish and Wildlife Field Office, Endangered Species Branch, Fairbanks, Alaska at (907) 456-0499. We recommend that you call that office for instruction on the handling and disposal of the injured or dead bird.

Lessees must provide MMS with a written statement of measures that will be or that have been taken to meet the objective of this stipulation. Lessees must also include a plan for recording and reporting bird strikes that occur during approved activities to the MMS. This information must be included with an Exploration Plan when the EP is submitted for regulatory review and approval pursuant to 30 CFR 250.201. Lessees are encouraged to discuss their proposed measures in a pre-submittal meeting with the MMS and FWS.

**Attachment B**  
**Communication and Consultation with North Slope Subsistence Stakeholders**

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Issues	Comments	Shell Response	Mitigation Measures*
<b>Credible Science:</b> Baseline Studies	You mentioned the word catastrophe, what's the closest fault line?	There are not active faults in this area but it is a requirement of the BOEMRE that we conduct shallow hazard surveys to ensure that we do not drill through a fault. All of the planned wells are located a good distance away from all faults in the area, and each of those faults is dormant. They have not moved in several million years.	N/A
Baseline Studies	I want to see that-90 foot drop, that hole in the ocean floor. I read a lot of literature of Shell and it's not all exactly what you guys say.	That's why we are having these discussions.	N/A
Biological Environment	What's the polynya zone?	It's an area near the shore where there are open leads along the Chukchi Sea coast with currents where there is a lot of food. The whales follow these currents in the open areas to get their food source.	N/A
Traditional Knowledge	Some large blocks of ice blocked ice from moving from Greenland some time ago.		I
<b>Operational Impacts:</b> Discharge	Can you explain "Cutting after 20" casing"? What is casing?	Casing is the pipe that transmits the cuttings to the surface and keeps the hole from caving in. Cuttings are small chips of rock that the bit grinds up. We capture the cuttings and drilling mud in containers instead of discharging them into the sea. We transport those out of the Arctic for disposal.	K
Drilling	Because of that the amount of drilling, does Shell feel like the expert now because of that?	Shell doesn't just rely on our own internal expertise, we work with people all over the world. We work with all kinds of people even those in communities and with Subsistence Advisors, etc.	E and L
Health & Safety	If one does encounter an emergency will there be Search and Rescue equipment?	Yes. We will have a dedicated helicopter stationed in Barrow to perform search and rescue and evacuation operations.	J

Issues	Comments	Shell Response	Mitigation Measures*
Health & Safety	Can you describe what kind of infrastructure you envision for those programs?	We have a big white hangar in Barrow you may have seen. We will be using this for our air operations for the Chukchi Sea and for search and rescue operations. In Deadhorse, we have a base that is associated with the other infrastructure there for supporting operations in Prudhoe Bay. In the Chukchi Sea we will have a small marine operations station in Wainwright.	J
Health & Safety	What are the minimum guidelines for Shell flying helicopters here? My point is that there were people doing impact contract, due to fog and the minimum safety reason, since you say you're going to have the SAR and with these kinds of deadlines, you will not be able to monitor the ice.	We use the same acronyms for two things. SAR for Synthetic Aperture Radar and for Search and Rescue. We are required to follow the FAA guidelines for aircraft operations including not flying if conditions are below flight minimums. It is no different for our air operations than for anyone else.	J
Ice Management and Monitoring	What is your plan if ice is coming suddenly?	We have a Critical Operations and Curtailment Plan, that includes ice. We have the real time satellite imaging, radar and ice management vessels doing real time ice reconnaissance. The main ice management vessel works from 3-25 miles away from the drill site. The anchor handler works from the drilling vessel to about 5 miles out so we have far and near ice information. If they think we will not be able to manage the ice we will stop drilling, secure the well to make it leak-proof, recover the moorings and move offsite.	I
Ice Management and Monitoring	Has Shell monitored Ellesmere Island ice? It was in the news quite a few years back.	Our ice monitoring is in the area we are operating. We also use the NOAA Ice Center and they are tracking it on a more global basis. Our monitoring is more intensive during our season. The dominant currents in the Arctic tend to move ice toward the ice. If large floes of multi-year ice are entering our area of operation we will be able to track them in a highly detailed manner for several days before they would impact us.	I

Issues	Comments	Shell Response	Mitigation Measures*
Ice Management and Monitoring	BP documented some ice that got stuck in shallow areas a couple years ago.	We are evaluating ice gouging in our lease areas on a yearly basis. This information is really important for development. Our platform must be able to resist the ice and maintain position in the ice all the time we are drilling and producing wells. It is evident that ice frequently grounds on shallow areas like Hanna Shoal and remains there well into the season. These are substantial pieces of ice. We survey the ice by airplane prior to the season and track ice on a daily basis during operations.	I
Ice Management and Monitoring	I have concerns about ice slamming against the platform.	The way we've developed our platforms are conical. They shear the ice and the ice goes around them.	I
Ice Management and Monitoring	The ice that we have up here and the broken pieces that are underneath the water surface will affect you. Your anchor points and your structure underneath. You need to study the glacier ice. There are big pieces of ice that you can't see.	The way we've developed our platforms are conical. They shear the ice and the ice goes around them.	I
Ice Management and Monitoring	I would like to see your plan in place to understand when and how the decisions are made to pack up and move. I want to see on paper who will make the call and it would be very important to get that together. Some days the ice is flat and over night there could be a lot of ridges.	It has to be on paper. We will resubmit our Ice management plan from previous submissions. We are required by the BOEMRE to submit what is called the Critical Operations and Curtailment Plan. Part of this involves hazardous ice that could threaten the drilling vessel. This Ice Management Plan outlines our procedures, and both the state and BOEMRE must approve it before we can drill.	I and L
Ice Management and Monitoring	Do you consider State of Alaska and Federal Government to be experts? If an iceberg came and knocked off the blow out preventer below the seafloor, what would you do? Based on his questions, there is ice that looks invisible and it could come	We must submit our plans to the state and the federal government for approval and issuing permits. They do have expertise in dealing with arctic operations. Shell has also operated in the Arctic for a long time, and we are experts in drilling oil and gas wells in the Arctic. We also need input from the local residents along the coast since you know more about this specific area than anyone. That's one of the reasons we're here: to get your input. The color of the ice is irrelevant to the	I and L

Issues	Comments	Shell Response	Mitigation Measures*
	and cause a problem.	radars that we use for mapping.	
Ice Management and Monitoring	Can you see the thickness of the ice with the satellite? What kind of danger if you can't determine the thickness of the ice?	No, but there are characteristics that tell us when it is multi-year ice and single-year ice. The multi-year ice is constantly tracked. You can tell by the density of it, but we are tracking and we look at subsequent images the direction of the movement.	I
Ice Management and Monitoring	Taking pictures of the water and the currents, if the wells start producing, they will be under the ice seven months out of the year and that's my concern. We need to know which way the currents are going during that time of the season. There is somewhere the currents are going and it will help you track oil, so we can catch it. Especially in the areas where you are.	We have been studying currents for many years, and the trends for oil slick migration (sometimes, toward Russia far offshore in the Chukchi Sea) are important as we plan for response options, anticipate tracking needs, stage shoreline protection equipment, etc.	H and I
Ice Management and Monitoring	There's a different signal that comes back with high-density ice with your ice monitoring methods?	Yes. We can tell from the return radar signals whether it is more dense, meaning multi-year ice, and less dense, meaning first-year ice.	I
Ice Management and Monitoring	On the eastern side of the Beaufort, the ice was all on your tracts. Can you explain that?	There are some heavy ice years, if we can't get out there we can't drill. We have the history of ice accumulations in previous years, and we are aware that there have been years when the ice was very severe. If it is that bad, we simply will not be able to drill that year. That's part of the risk of doing exploration drilling in the Arctic and we accept that risk.	I
Ice Management and Monitoring	Interested in Marine Mammal Observer data from last year. Made point when looking at ice maps that historically there was much more ice than what we are seeing today.	We have the history of ice accumulations in previous years, and we are aware that there have been years when the ice was very severe. If it is that bad, we simply will not be able to drill that year. That's part of the risk of doing exploration well drilling in the Arctic and we accept that risk.	I

Issues	Comments	Shell Response	Mitigation Measures*
Ice Management and Monitoring	I've never seen the ice in the Beaufort Sea that big. I think mother nature was trying to communicate to us. That we have to be very cautious. That ice will keep coming back.	If that is the case we will not get out there to drill. That is a risk we just have to understand and accept.	I
Oil Spill Prevention & Response	At any given time will they have oil spill containment?	We will have an oil spill barge and additional vessel very near the drilling vessel so that we can respond to a spill within 1 hour. There will also be an arctic tanker and a containment vessel that can reach the drilling vessel in a matter of a few days with capping and containment capability.	H and L
Oil Spill Prevention & Response	How often will you be changing your pipes (casing)? Cause that's what caused the GOM spill.	It had to do with a BOP and riser. New regulations require that we have to fully inspect and recertify the entire BOP stack every three to five years.	L
Oil Spill Prevention & Response	What year was your boom manufactured? Are they obsolete? How often do you replace them?	Most of the booms were designed in the last ten to fifteen years. They don't really become obsolete. In the GOM you heard of booms failing. Some of the booms, especially in the shoreline protection mode, were not used properly. The first ones were developed in the early 1970s. They evolved over the last 30-40 years. The life expectancy of a boom depends on how they are being used, and under what kind of conditions. They can get punctured or damaged if used around heavy debris, floating branches, etc.	H
Oil Spill Prevention & Response	That 21-foot Packman boat – is that a standard vessel?	Yes, and it is very reliable for shallow-water transport of equipment, boom handling and anchoring, etc.	H
Oil Spill Prevention & Response	Are those booms made for different types of water, like cold or hot water and ice conditions and so on?	There are different kinds of booms for very specific needs – open ocean, shallow-water, shoreline, river/stream, etc. They are constructed for different purposes, different currents, different degrees	H

Issues	Comments	Shell Response	Mitigation Measures*
		of ice exposure, etc.	
Oil Spill Prevention & Response	Do you have booms that can recover oil under ice? Do boats tow the booms? How will oil be recovered in ice?	It would not be practical to use booms under ice as they could get snagged under the ice, miss oil trapped in the cavities of the under-ice surface, etc. We have other tactics for dealing with oil under ice, including the possible exposure of the oil with vessels, tipping of ice cakes to encourage flow to surrounding water, allowing oil to become entrained within the ice and then accessed later on, etc.	H
Oil Spill Prevention & Response	Do you monitor currents for the boom?	Yes. We are doing a lot of scientific studies on currents right now. There are instruments that are deployed, like upward looking sonar buoys sitting on the sea floor that map the water and currents by sending a sonar signal upward and collecting the reflected data that show currents, temperature differences and salinity. There's a lot of information being gathered in research and traditional knowledge.	H and I
Oil Spill Prevention & Response	Based on the GOM, the boom had water nearshore that went over the top and the waves were not even that big. What is the height of the boom?	Some of the booms in the GOM were used inappropriately in the nearshore/shoreline environment where breaking waves could splash oil over and under the boom. They should be used in relatively quiet water areas - that's what small shoreline protection booms are intended for. All booms have limitations for effective containment when the wind and seas become excessive.	H
Oil Spill Prevention & Response	Will the containment and capping system be ready by 2012?	Yes, it's being developed now and it will be deployed and ready to go for May, 2012.	L
Oil Spill Prevention & Response	The part where the three yellow caps, what kind of suction device will it be using for the containment (containment system slide)?	Our first option would allow for us to latch back onto the wellhead and shut off the flow like what happened on the BP Macondo blowout in the Gulf of Mexico. That's how BP shut off the flow in that well – by capping. The second option, if that connection wasn't available, would be to use one of those domes to collect the oil underwater and pipe it aboard the vessel. Each dome has a pump that will push the oil into separation vessels on the containment vessel where the oil, water and gas will be pulled off. The gas will be flared. The oil will either be collected and offloaded into the tanker or incinerated. The water will be released back into the sea.	L

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	In the 80's when you went out and I wasn't aware and I was actually shocked. We have to tend to those old wells.	Those wells were fully capped.	N/A
Vessel Logistics	Are you constructing a large icebreaker?	Yes, it's a hundred feet longer than the Nanuq. The Nanuq will be in the Chukchi and the new vessel called Hull 247 will be in the Beaufort Sea.	N/A
Vessel Logistics	Between the two drilling locations, will there be traffic between the two locations? Will there be ships going back and forth regularly?	Each drillship will come with its own assets and shouldn't require any transport unless there is an emergency. We will have a shore base in each area with an air operations base between the two seas in Barrow.	A, B, C, D, E, and J
Vessel Logistics	Will there be maritime infrastructure?	No. We will utilize West Dock only. We will have no other marine operations bases in the Beaufort Sea.	N/A
<b>Permits:</b> Process	Offshore development must be done in a way that benefits the local people; in sense of caring for the resources and communities. They are being asked to take the risks but not necessarily getting the benefits. At what point does tribal sovereignty play a role in relation to federal government? How far offshore does this reach? The state is limited to 3 miles, so does sovereignty extend as far as federal?	Thank you for your comment.	N/A
Quality	Based on the fact that there was some secret drilling out there before. How do we trust you people? That drilling that took place.	We have to get permits and we are here. I am not sure what the regulatory regime was at that time in the mid-1980s and early-1990s. We are here in Barrow talking about our plans to be sure you know what we are planning to do. This question was a follow on to a comment that was made that we drilled in the 1980s and 1990s and people in Pt. Hope had no memory of that drilling. This historic drilling	N/A

Issues	Comments	Shell Response	Mitigation Measures*
		was not secret. It was subject to similar permitting and public disclosure and discussion that we have today. The point of the original comment is that the drilling in the 1980s and 1990s did not leave lasting memories of problems or damage.	
<b>Quality of Engagement:</b> Positive/Feedback	Very impressed by Kulluk Visit. 120 photos taken. Copied to CD (got a copy).	Thank you for your comment.	N/A
Positive/Feedback	Just hired on at UMIAQ for spill response, big supporter	Thank you for your comment.	H
<b>Value Proposition:</b> Jobs	I would enjoy joining an oil response team in near future for offshore drilling		N/A

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- F-Marine Mammal Observers
- G-Robust Marine Mammal Monitoring Protocol
- H-Oil Spill Response Fleet on standby 24/7 near drilling location
- I-Real time Ice and Weather Forecasting
- J-Crew change by helicopter and collaboration on routes to and from shore base
- K-Zero discharge of: drilling fluids and cuttings after the 26-in casing; gray and treated black waters; bilge and ballast waters
- L-Enhanced blowout prevention and mitigation measures (i.e., second set of blind shear rams, increased frequency of BOP testing, redundant ROV hot stab panel, capping stack and containment system, and relief well plan with designated standby relief well drilling unit).



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Issues	Comments	Shell Response	Mitigation Measures*
<b>Credible Science:</b> Air Quality	How is our air quality? Are we going to see more of a Prudhoe Bay or less?	We have new tier-four engines that are very clean. We are replacing the engines on the <i>Kulluk</i> . We will have a very clean operation. We will have to monitor the air emissions at a certain level. We will not have a Prudhoe Bay situation.	N/A
<b>Offshore Education:</b> Technology- Containment and Capping	Was that technology available for BP? If it was not and that much technology changes in a year or two, why not wait another five years to drill?	The technology is not new – it has been used for shallow wells since Hurricane Katrina blew over several platforms in the Gulf of Mexico. There is a photograph in the slide presentation showing work using a containment vessel in shallow water in the GOM. There was no similar technology used before the BP Macondo blowout in deep water. The technology that was used was not new, just enhanced for deep water. For shallow water, this technology is not new and it has been used in the past.	L
<b>Operational Impacts:</b> GOM - Macondo	What is the well (reservoir) pressure differences between the deepwater GOM wells and these wells in the Beaufort Sea?	15,000 psi in the GOM versus about 3,000 psi in the Beaufort Sea.	N/A
GOM - Macondo	How many ships did they have in the GOM to response to the Macondo blowout?	There were around 130. It's not about the quantity of ships, but the quality and appropriate use of ships. We have much more storage capacity than is needed based on current understandings of potential recovery. In the Gulf of Mexico there were many vessels that had skimming capability; however, the onboard storage was not always sufficient to handle the volume of oil/emulsion that was available for recovery. Other factors, such as aerial guidance or spotting, oil transfer systems, etc. are important for successful skimming operations.	H and L
GOM - Macondo	Another thing to realize is that they weren't prepared in the GOM, but here they are and they are making every effort to be prepared.	Thank you for your comment.	H and L
GOM - Macondo	Wasn't Shell the cause of the GOM spill?	No. It was BP. And they weren't fully equipped to handle either the blowout or a spill of that magnitude.	H and L
GOM - Macondo	Were any of these vessels used in the GOM oil spill?	None of these ships were used in the GOM.	H and L
Health & Safety	Are we doing any drills to get the people off the rig?	Yes. These drills are part of all marine operations. We will also have dedicated Search and Rescue helicopters available as long as the weather is good to evacuate people. We will also have standby anchor handlers that can house 60-80 people in case of an emergency.	H and J

Issues	Comments	Shell Response	Mitigation Measures*
Health & Safety	How high will the helicopters fly?	1,500 feet, that is the elevation that we were told will not spook the caribou herd. This is a plan and if it doesn't work, we can make adjustments. We can do this with the Subsistence Advisor Program. There is a lot of flexibility. They fly a pattern that will go north, than run 5 miles inside the coast line due east and then fly due south to the drilling vessel. We selected this flight path and the elevation after consultations with the caribou hunters to avoid spooking the herd with our helicopter flights.	G and J
Oil Spill Prevention & Response	We had 95 mile an hour winds here and an iceberg could come at you very fast.	We would not work in severe conditions that put lives at risk. There might have to be a period we wait and track the oil. We look at all response operations and we look at how working in ice and cold water can help us. Cold water does a number of things to oil, it makes oil thicker and the ice can serve as a boom. If you can keep it thick, oil will burn better.	I
Oil Spill Prevention & Response	Do you have skimmers that will work in ice that is 4 feet thick?	We won't be using skimmers in heavy ice. I will show you pictures of what we would do in heavy ice. We are not planning to drill in heavy ice.	H
Oil Spill Prevention & Response	How new are the skimmers? And when were they put on the vessels?	There brand new, some have been in place for the past couple of years.	H
Oil Spill Prevention & Response	Will you use the villages on standby just in case of an oil spill?	Alaska Clean Seas will manage the Village Response Teams and there will be a plan for shoreline cleanup in the highly unlikely event of a spill that will involve the villages.	H
Oil Spill Prevention & Response	I've seen some oil spill boom and they don't work good in rough waters. We get a lot of wind here and you need something that will work here.	Most boom will work effectively in f light to medium waves. You need to work them in a fairly quiet area (if possible), outside of choppy or breaking waves. That's where the challenges are. One tactic is to use the lee side of the ship to create quiet water so the oil can be skimmed from the water's surface, or to tow containment boom with the wind (same direction) to minimize turbulence within the boom.	H
Oil Spill Prevention & Response	Are the booms flexible, will they freeze?	They are very flexible and they have to be durable enough to be able to work in limited ice conditions, and to be able to maneuver between ice cakes with small vessels.	H
Oil Spill Prevention & Response	You said you have ships that will break the waves down?	You operate vessels with the skimmer on the leeward side, if possible, to try to stop breakers from carrying oil over the boom.	H
Oil Spill Prevention & Response	Has this equipment been tested? Where?	A lot of the systems have been tested most recently in extreme northern waters with ice, and in trials with and without ice in large test facilities.	H

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	Has this been tested before in Russia, Iceland or Greenland? Is it theory or are the people here going to be the guinea pigs?	These systems have been tested including booms, skimmers, fire booms and they tested several devices off of Svalbard, Norway, off Canada, and other cold regions. There have been several field tests and tank tests over the past 10 to 15 years.	H and L
Oil Spill Prevention & Response	I saw some pictures where you said you did your Norway recovery tests. You made it sound like you were working in heavy ice. I saw you working with young ice. In your picture it looks like young ice. We need to find equipment that will work in 3-4 feet of ice.	I don't know the pictures you are referring to but the experiments in Norway involved a range of ice concentrations and ice thicknesses. The SINTEF trials, shown in the photos and video at our kiosk help provide insight at to the actual ice conditions in which we have tested equipment for containment, skimming, burning and the use of chemical dispersants.	H
Oil Spill Prevention & Response	Does Shell have any intention to use dispersants? And what are the effects?	We have the capability. We have no intent to use it in the Beaufort Sea where waters could be too shallow. If conditions are right, and their use is approved, dispersants could be used in deeper water where there is good mixing and dilution of the treated oil. If there was a situation where skimmers and booms were not working well because of high wind and sea conditions, the government and industry could make an assessment of the trade-offs of using and not using dispersants, and then approve a limited use of them to test their effectiveness. Right now, mechanical cleanup is preferred, followed by burning, if appropriate.	H
Oil Spill Prevention & Response	Will Alaska Clean Seas continue training sessions with the community to respond to an oil spill?	Yes.	H
Oil Spill Prevention & Response	When you capture the oil can you pump it onto the tankers?	Yes, if we need to store it we can lighter it off the containment barge using other vessels. The tanker has a single-point mooring system meaning that it swings around a bow anchor. We can't tie it to the barge, but we can move the oil from the barge to the tanker using the storage capacity we have in our oil spill response vessels.	H
Vessel Logistics	Are those the same anchors as the ones used on the movie clip that they use on the drillrig?	For the <i>Kulluk</i> , we do have some that are a little larger, they are the big anchors, the Sevpris New Generation anchors are 7.5 tons. But, we have 12 anchors instead of 8 like the <i>Discoverer</i> in the video clip. We also have some Bruce anchors. They are very large and heavy.	N/A
Vessel Logistics	What are the weights of the anchors?	7.5 tons each and they are about the size of this meeting room, seems like. We pull test all the anchor lines, than we pre-tension each line to keep the drilling vessel right over the well.	N/A
Vessel Logistics	How far offshore are you going to drill?	20 miles.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
<b>Threat to Subsistence:</b> Terrestrial Wildlife & Habitat	You're going to be using helicopters in July and August? That's our caribou hunting migration time.	Yes. That is why we have the communication plan and Subsistence Advisors.	A, B, C, D, E, G, and J
<b>Value Proposition:</b> Jobs	I'm the Kaktovik delegate for the North Slope Science Initiative. Will there be Com Centers in Pt. Lay?	Yes.	A and B
North Slope Borough Science Agreement	Of that \$5M, will that money be monitored to how it is spent? Who is monitoring the funding? When you give NSB money they tend to only direct it to Barrow.	They will be audited internally on how they spend the funds, and Shell is also auditing too. It has to be high quality science that has to be peer reviewed. Any contract left to doing science is subject to be reviewed by other scientists. The steering committee will be comprised of each coastal committee and the NSB.	N/A

Notes:

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March 22, 2011

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Russell Tagrook		P.O. Box 120			
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JAMES LAUPE JR.		Box 23	640-0170		
Nora-Jane Burns		Box 101	640 6723		nora-jane-burns@yahoo.com
Stephanie A. Shanna	CHAP/NSB Health	Box 55	640-1362		
Juanita A. Roothook					
Peter Tagrook					
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SIGN-IN SHEET – Kaktovik Plan of Cooperation Community Open House Meeting  
Kaktovik Community Center, Kaktovik, Alaska  
March 22, 2011

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Joe Safin	Myself	P.O. Box 99	646 6600		
Tom Brower	House	P.O. Box 21			
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Leonard Gordon		Box 12	907-750-2351		
Doty Georgianna	Self	Box 58	907-640-2105		
Susan Gordon		Box 12	907-640-3000		
Mel H Zee Kaktovik	Self	Box 115	907-640 0044		
James Joseph H.	Self	Box 9	907-640-2224		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Leonard Atootchoot		37 KAKTOVIK			
Freddie Kakeak		83 KAKTOVIK			
Brittany Skayugak		53 Kaktovik			
George Kakeak Jr		119 Kaktovik			
James Adams		327 Kaktovik			
Charles Lampe		P.O. Box 15 Kaktovik			
Flossie Lampe		P.O. Box 15 Kaktovik			
Archie Brower		P.O. Box 41			
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Mark Ologak	myself	P.O. Box 70 Kaktovik, AK 99747	640-2059	NONE	NONE
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Mildred Ashkan			640-2105		
Henry Goins		Box 70			
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Mary Gallagher		Kaktovik			
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Noveen Kakeak		"			
Nathan Gorda <sup>gr</sup>	Self/KIC				
Norma Gorda	Self				
Natasha Gorda					
Felisha Brower					
Clarice Akoothak	Self	Bx 112 99747 BTT, AK.			

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Issues	Comments	Shell Response	Mitigation Measures*
<b>Credible Science:</b> Baseline Studies	Will the North Slope Science Agreement be affected by the next NSB Mayoral election?	No, it will not. It is separate from politics and is managed by the Wildlife Department. Mayor Itta signed the original document, but the initiative will not be run by the mayor's office. The Wildlife Department will.	N/A
<b>Operational Impacts:</b> Discharge	How will the mitigation (zero discharge) in the Chukchi Sea, will it be comparable to the Beaufort Sea too?	We have chosen zero discharge in the Beaufort because our operations are so much closer to shore. The Chukchi program is many miles from shore unlike the Beaufort Sea well sites.	N/A
Health & Safety	Can we use your boats for whaling?	We will commit our vessels to help anyone who gets into trouble. This is a normal part of marine operations in the open ocean. If you get in trouble during whaling we will be available to help. You can get in touch with our vessels through the Com Centers.	A and B
Oil Spill Prevention & Response	Can you clean oil in broken ice?	Yes, we have had opportunities to clean up oil during small spills and field trials in ice; however, because we have never had a significant spill in the Arctic, we have not tested our large recovery systems under such conditions.	H and K
Oil Spill Prevention & Response	How many times have you cleaned oil on ice?	Numerous times. I have personally cleaned oil in ice 15-18 times over the past 25 to 30 years; but these experiences have, once again, been of relatively small size. Thankfully, we have not had to experience such spill events, and therefore depend upon controlled field trials and tank tests. Generally, efficiencies with some of the latest skimmer designs show efficiencies that are in the 70-80% range. It all comes down to our ability to access the oil when it is mixed with ice.	H and K
Oil Spill Prevention & Response	Will you have a shut-off valve below the surface to stop a flow?	Yes. We have blow out preventers that are located in a mudline cellar below the seafloor. (In a meeting following the presentation, Michael and others were shown a video animation of how the mudline cellar is constructed and how the BOP stack is protected to prevent damage to these valves so they are available to shut off flow from the well if necessary).	K
Oil Spill Prevention & Response	How long will it take to connect the containment system?	It won't be immediate. If you remember the Macando incident, there were damaged risers in the way and had to be removed. It took nearly a month for that debris to be cleared. We will have a crane on site for that purpose so it will probably take 2-3 days maximum to get the	H and K

Issues	Comments	Shell Response	Mitigation Measures*
		capping device in place.	
Oil Spill Prevention & Response	In the meantime will you have equipment to contain the oil in the water?	Yes, we will. We will have skimmers and booms to start gathering to pick it up.	H and K
Oil Spill Prevention & Response	How many oil spill response boats will you have?	We'll have at least six vessels with advanced skimming capability offshore, and many smaller boats that could assist with nearshore and shoreline containment/recovery operations.	H
Oil Spill Prevention & Response	Has this equipment been tested in ice conditions?	Yes, both in actual spills, controlled field trials, and large tank tests with oil.	H and K
Oil Spill Prevention & Response	Are you able to contain the lighter oil that comes up from a spill?	Yes, we have skimmers that can handle a range of oil viscosities from very light low viscosity material to oil and emulsions that could take on the consistency of mayonnaise to something almost as viscous as peanut butter.	H and K
Vessel Logistics	The platform you showed us in ice – does that come in pieces?	Probably 2 pieces with the production and drilling equipment in one piece called “topsides” that sits on top of a base called a “jacket.”	N/A
<b>Permits:</b> Process	Obama just announced that he was going to allow drilling in the Arctic. Can that happen without anyone in the communities knowing about it?	We cannot drill without permits and part of those requirements are that we come to the communities and talk about our plans and incorporate those comments into our Exploration Plans.	C
<b>Quality of Engagement:</b> Positive/Feedback	Know that the captain whaler are getting mad not get much whale this year. So that we young elder stand up and let you get the answer. So that why lot's of items pass on. And we take over. So be happy. We young elder take over the oldest Elder, and God bless you all and keep on praying or read bible John 3:16 from: Sister in Christ.	Thank you for your comment.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
Positive/Feedback	In favor of oil drilling. Running out of oil and need more.	Thank you for your comment.	N/A
<b>Threat to Subsistence:</b> Marine Mammals	The whales run 60-70 miles offshore there too.	There are some that migrate out there, but for the most part the whale migration expands once the whales pass Barrow. One group goes to the north and ends up in Russian water. Others scatter throughout the Chukchi Sea. In the Beaufort Sea, the entire bowhead whale population travels closer to shore in a corridor that is about 10 miles wide. It turns out that our drilling operations there are very close to the center of that corridor. The whale hunters there have asked that we suspend operations to avoid disruptions to their fall hunts. We will be so far from the shoreline in the Chukchi Sea that we should not impact many whales at all.	A, G, C, D, E, F, and G
<b>Value Proposition:</b> Jobs	Will the money from the Science Program create any temporary jobs?	It is possible – we will get direction from the steering committee and some of the projects may involve local residents participating in field work.	N/A
Jobs	If you have an oil spill will you hire local people?	Yes. Most spills that I've ever worked on have included a heavy reliance upon the expertise and knowledge of the local community.	H
Jobs	Do local oil spill responders need special certification?	Not, necessarily "certification"; however, they do need some training like HAZWOPER. It might be the 40-hour course or it might be as little as 24 hours depending on what the duty of the individual is during the response.	H
Jobs	Do local oil spill responders have to pass a drug test?	Yes.	N/A

Notes:

\*Mitigation Measures are only assigned to applicable comments.

"Not applicable" (N/A) is used to designate comments that do not require mitigation measures as a course of action. See [Mitigation Measures Index](#) definitions according to assigned letter.

**2011 Proposed Mitigation Measures**

A-Communication Plan for avoiding conflicts with subsistence users.

B-Collaboration and Communication with Whaling Associations

C-Plan of Cooperation (will work to obtain a CAA)

D-Will honor 2010 Camden blackout dates for Nuiqsut and Kaktovik whaling.

E-Subsistence Advisors based in Chukchi and Beaufort Sea Villages and Kotzebue

F-Marine Mammal Observers

G-Robust Marine Mammal Monitoring Protocol

H-Oil Spill Response Fleet on standby 24/7 near drilling location

I-Real time Ice and Weather Forecasting

J-Crew change by helicopter and collaboration on routes to and from shore base

K-Enhanced blowout prevention and mitigation measures (i.e., second set of blind shear rams, increased frequency of BOP testing, redundant ROV hot stab panel, capping stack and containment system, and relief well plan with designated standby relief well drilling unit).



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Leo Siqua					
Michael Tagarook	Self				
Charles Akak					
Terry Tagarook	Self				
Bonfance	Self				



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Issues	Comments	Shell Response	Mitigation Measures*
<b>Credible Science:</b> Baseline Studies	Do you have the depth from the surface to the seafloor?	120 feet	N/A
Baseline Studies	The fish come into the river. And they will stop going down the river. When I've flown back and forth between here and Barrow I noticed many rivers. I am trying to understand and I am concerned how it will affect the fish going to the major rivers.	The fish that come up from the rivers for the most part, most of the fish are born in the MacKenzie Delta and they come and move back and forth near the shoreline and they come up the rivers to grow and spend 1-3 years and come back out and go back over to breed in the MacKenzie River. Most of their life cycle is up in the rivers or close to shore. They stay near the ice. Because we will not be discharging any muds, cuttings or sanitary waters, there will not be any pollution. We will not be doing anything onshore, but flying over. There shouldn't be any problem with that, but we are doing scientific evaluations.	J and K
Baseline Studies	Have you studied the currents farther out in the Sivulliq area where the Arctic Cisco migrate to our rivers? There is a lot of fish out there that needs to be studied.	We have been doing fish studies, this year we're working with BOEMRE. There will be another fish study this year. There have been lots of studies close to shore, a total of 30 years on fish. We're doing one farther offshore this year in the Beaufort. We have three years of data in the Chukchi and we will have four years of data after this year. We're looking at currents, ice, plankton, the animals on the seafloor (e.g. clams, coral, fish and mammals). We're looking at many many mammals taking samples and collecting data.	N/A
<b>Offshore Education:</b> Technology	What is the depth from the seafloor to the valve?	It is 8.2 feet for Sivulliq and Torpedo. That's the depth of the deepest ice scour into the seafloor that we've seen in previous year's shallow hazards surveys. The normal ice scour is about three feet deep.	N/A
Technology	If there are large icebergs, can't they scour deeper than 8.2 feet?	It is possible. However, the seafloor north of the Beaufort Sea coast is very flat. So, if a large iceberg that would gouge more than 8.2 feet were to advance toward our drill site, it is likely that it would ground out and stop before it reached us. Also, we have vessels that can divert even a large ice feature so that it would not approach the drill site. Even if the subsea BOP remaining on the wellhead were to be bent or damaged, we will have other plugs	L

Issues	Comments	Shell Response	Mitigation Measures*
		inside the wellbore to keep the well from flowing. The BOP stack is just a safety device; the well is already plugged so it won't flow even if the BOP is sheared completely off. So, the probability of such a large iceberg causing a spill is very, very remote.	
Technology	This looks to be a really good classroom science project. I invite you to the Trapper School. Let's not wait for three years, let's do it this year.	I would like to help out with that. As a follow-up with Dora, it was suggested that basic courses in both drilling and oil spill response might be good topics for discussions with students. Al and Les have taught these classes in schools in other villages in the past. If we are invited, we would be happy to teach these basic classes in Nuiqsut as well.	N/A
Oil Spill Prevention & Response	What is the strength on these booms?	The potential strength on these booms is up to 15,000 pounds or more. When you're towing the booms, the tension on the towlines may only be a few hundred pounds to 1,500 to 2,000 pounds, unless jerked temporarily by a towing vessel. The booms are typically over constructed with robust tension members and fabric to handle occasional high loadings of tension and contact with ice.	H
<b>Operational Impacts:</b> Emissions	There's always a yellow smoke in Prudhoe and it looks like it's going offshore. A yellow haze, does that pollute the ocean?	Yes it does. If it falls in the ocean, it does pollute. This is at very low levels though. We have collected water samples in the Arctic. Though you can certainly detect some of these pollutants, they are at very low levels, below a level that would cause health effects. We are monitoring these levels and will be able to detect if they start going up to levels of concern.	N/A
Emissions	Does the pollution from Prudhoe Bay flares cause harm to the animals in the land and ocean?	There is a possibility that there could be harm but levels are not there yet. But our drilling air emission permits is the strictest standard in the nation. Stricter than any for Prudhoe Bay. Shell Oil has to meet the strictest standards.	N/A
Emissions	Will you catch a disease from the air emissions dissipating on the land and ocean, the Prudhoe Bay yellow haze?	Pollutants can get into the tissues in the fish, if it gets to high levels it could be dangerous. We don't see anything at dangerous levels at this time.	N/A
Emissions	Fish eat other fish and krill. After that yellow haze from Prudhoe Bay dissipates and falls in the ocean and the small krill eat it and the fish eat it.	Thank you for your comment.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
Emissions	That yellow haze that we see from Prudhoe and Alpine, she remembers many years ago before there was a haze. She has been to many meetings and expressed her concerns. We have an east and west wind and sometimes we don't have a wind and if there is a southeast wind it will bring the pollution haze to the village.	Thank you for your comment.	N/A
Emissions	I want to thank Shell for coming and answering questions. She realizes that they've already breathed in this pollution from Prudhoe Bay and Alpine. I hope it will be less in the future.	We have really really stringent air permit requirements, the most stringent in the nation. Our air permits are the first ones issued by the EPA since they adopted the new air emissions standards. So our emissions must be control more strictly than anything in the past.	N/A
GOM Macondo	You do your tests in GOM and not here. I don't think you will be able to do it here. They couldn't clean it up in the GOM either.	Keep in mind there is a much higher flow rate in the GOM. If it happens it is only coming up a hundred feet or so and it is coming up at a point or so. In the GOM it could come up at times within a region of 10 by 15 miles, surfacing within existing older slicks. It was hard to know where it would come up, a situation very different from a spill source in only 100 feet of water or less.	H
GOM Macondo	What if you're BOP fails, just like in the GOM? What if your equipment fails and it could be just like the GOM?	In the BP Macondo blowout, the well was drilled to 18,000 ft. We will only be at about 8,000 ft. Reservoir pressure at the Macondo well was nearly 15,000 psi. The wells in the Beaufort Sea will be around 3,000 psi or a little more. We have a 10,000 psi BOP stack with two sets of blind-shear rams instead of one. If the first set of blind-shear rams fail, we have a back-up set to close in the well. We have multiple layers of barriers to prevent flow, and prevention is the key to our planning. We must be responsible and have a plan to respond to any emergency situation, including a spill, but we rely on avoiding all spills through a very thorough prevention program.	H and L
Health & Safety	Other companies say they will stop flying the helicopters, they still fly them.	It will be difficult to sneak out to Camden Bay. A long time ago, we specifically talked to Kaktovik, because they were concerned about the altitude we were flying our helicopters. They requested we fly them at 1,500 feet and not 1,000 feet. We agreed to this and it is in the CAA.	C, G, and J

<b>Issues</b>	<b>Comments</b>	<b>Shell Response</b>	<b>Mitigation Measures*</b>
Ice Management and Monitoring	After you settle your vessel in the Beaufort Sea, if there is any iceberg coming at you, what is the time frame for you to move? We've seen the thick glacier ice. While you're out you might get hit by this.	Typical time is 36 hours to move from the site. We will put cement down the well and plug the well. Then we will disconnect from the well and move offsite. The video shows how we set cement and mechanical plugs in the well, then leave the bottom portion of the BOP stack attached to the well. We can either recover the anchors or use the Rig Anchor Releases to separate the anchor wires from the chain. If we get into a very serious situation, we can suspend the well and move the rig off in six hours or less.	H, I, and L
Ice Management and Monitoring	There is a heavy ice out there in the Beaufort Sea, if there is an oil spill out there and you will not be in control with your vessels.	We have equipment and vessels that are always monitoring the ice. The drilling rig will move offsite if we encounter ice we cannot manage.	H, I, and L
Ice Management and Monitoring	Would there be a phone number for ice updates, so the whalers can find out where the ice is?	Yes, there is a website. We can get something set up to provide that information to the villages. This includes both weather and ice forecasts that are detailed each day and sometimes more often.	I
Ice Management and Monitoring	If you get boxed in from the ice during a spill clean-up, what are you going to do about it?	We have synthetic aperture radar in satellites that look through clouds and fog to help spot approaching ice and keep us from getting boxed in. We also have ice management vessels that work up to 25 miles up-current and upwind to track ice movement. These are also equipped with conventional radar. Further, if we have an emergency situation in progress, we will cease drilling in the other basin and move all of the boats supporting the other drilling vessel. So, instead of just two ice management vessels tracking the ice, we would have four. Instead of two supply vessels assisting in operations, we would have four. We would employ both oil spill fleets. We would be tracking ice with fixed wing and rotary aircraft. If we have a spill we will throw everything we have at it because we want to minimize impacts as much as possible.	I, H and L
Ice Management and Monitoring	So, we can call in for an ice forecast?	Yes, we can put it in the Com Centers. We've thought about putting in a big screen in the Com Centers that reports ice, weather and sea states.	I

Issues	Comments	Shell Response	Mitigation Measures*
Ice Management and Monitoring	Would we be able to see a whale with this synthetic aperture radar. If we lose a whale can they see it in a picture?	We aren't sure if a whale would show up on satellite radar, but it could. It depends on the return signal.	I
Oil Spill Prevention & Response	So the booms will not be ruptured?	I will never say never. It could be torn with bad drivers towing fast in ice. The vessel drivers are trained to know the limitations of the equipment. We have other techniques as well. We have large skimmers that can work within a strong boom, and over-the-side skimmers like rope mops, drum skimmers and weir skimmers that can be placed in pockets of oil trapped by ice.	H
Oil Spill Prevention & Response	How do you get the oil under the ice?	Normally, oil will remain on the water and slide out from below ice cakes. If ice floes are big and trap oil beneath them, vessels can break the ice and expose the oil, they might tip the ice allowing oil to slide and surface next to the ice, or some ice may get trapped and then freeze in quickly, becoming surrounded with ice – we can access that oil later by tracking the oiled ice – skimming it when it surfaces, or burning it in place.	H
Oil Spill Prevention & Response	How about oil in the breathing holes of the bearded seals?	There is such a low likelihood of oil surfacing within those locations; however, we'd monitor for that possibility and work with specialists to take the best course of action to minimize exposure and impact.	A, B, C, E, F, G, H, I, and L
Oil Spill Prevention & Response	Two-percent left could still be a lot of oil, if there is only ninety-eight-percent effectiveness of insitu burning.	The remaining portion, as smoke or floating residue is so very small that such effectiveness is seen as very beneficial. The remaining portions missed are diluted, and dispersed to low levels quickly, and nature continues to work in evaporating and degrading the oil.	H
Oil Spill Prevention & Response	Is there a chemical reaction when you burn the oil, does it get all burned up?	When you burn oil the efficiencies are typically well over 90%, often as high as 98%. We can access the burn residue and recover it if that is the best use of personnel and resources. One weighs the benefits of collecting the residue, taffy-like tar balls with the lighter volatiles burned away, against the time being better used to collect and eliminate other oil slicks in the area.	H

<b>Issues</b>	<b>Comments</b>	<b>Shell Response</b>	<b>Mitigation Measures*</b>
Oil Spill Prevention & Response	So what if the wind changes when you are doing the burns and it is not in your favor?	It takes about a half an hour to eliminate large volumes of oil trapped with a fire boom. The duration of the burn is short, and ignition is always done with careful consideration of where the smoke is likely to go, its direction and duration in light of the proximity of populations that could be nearby. We often insist that burns be at least 3 to 6 miles away.	H
Oil Spill Prevention & Response	Will you be able to recover in a pressure ridge or if it's in a crack with swells? What if there is a blizzard?	Good questions. We look for any barrier, such as ice ridges where oil might be trapped on water along such a ridge – it can sometimes help thicken the oil for recovery with skimmers or with controlled burning. Crack or leads in the ice, if filled with oil also help to enhance the recovery; or, if we can't get to it safely, we'll consider burning it in place. If a blizzard or storm comes up, our first goal is to protect personnel and vessels, and to sometimes simply wait until it is safe to access the oil by tracking the oiled ice and then dealing with it when conditions allow.	H and I
Oil Spill Prevention & Response	You said you would have to wait for the weather, you would have to go another 100 miles with the ice and that would be a lack of time for cleaning up. You can't win against mother nature. While that oil is traveling with the ice, you will have to clean up from end to end.	The ice is keeping it contained and away from shore. You are right, you may have to go 100 miles, but that is just the way it is. We will do whatever needs to be done to track and capture or burn the oil when it is safe to do so.	H and I
Oil Spill Prevention & Response	We will be devastated if that oil is taken in the ice in currents. Especially in the Chukchi Sea, there is heavy ice there.	Equipment had to be built and brought from hundreds of miles away in the GOM. If oil gets away from you, you cannot control the environment. Our first thing is to keep it from ever being released in the ocean.	H and L
Oil Spill Prevention & Response	So you will have a second rig that could be transported to drill a relief well?	Yes. That first rig should be able to drill its own relief well, and we will have two BOPs on each rig so the first rig can start drilling right away. If the rig is disabled, the drilling vessel in the other basin will stop drilling, temporarily abandon the well and mobilize to the drill site and start drilling the relief well in a matter of days. That's the best part about having two drilling vessels available for drilling in the Arctic.	H and L

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	Those blind ram shears will not be activated until the well is plugged right?	Generally, the last thing we do is close the blind shear rams. We have many other means of controlling a flow from a well and multiple barriers in place to avoid a blowout. If we must close the blind shears, cut the pipe and close in the well it means that all of the other measures have already failed. That is a very rare situation.	L
Oil Spill Prevention & Response	When you in-situ burn the oil does it pollute the air and the ocean?	The products of combustion have been studied now for nearly 25 years involving the controlled burning of oil. The duration of a burn is very short, the smoke looks bad, but is only for a brief time and at a high level, reaching very low concentrations within a few hundred meters at ground level, and barely visible concentrations up higher. The fall-out is extremely small, with more than 95% eliminated by combustion during a typical burn. The smoke is part of the trade-off that must be considered when evaluating the net benefit to the environment by burning.	H
Oil Spill Prevention & Response	If you abandon the well you still have a cement plug right?	Yes, we have multiple barriers. We have at least two plugs and we may have a third one. We would also have a cap on the wellhead. With all that, we would have at least five barriers against flow from the well. Again, even without the BOP stack in place, it is unlikely that there would be a spill from a plugged well.	L
Oil Spill Prevention & Response	We live in an area where there are earthquakes. If the earth shakes will it cause a plug to come loose?	It is very unlikely that an earthquake would dislodge a plug. These are very rugged devices. The cement plugs are usually over 100 ft in length and the mechanical plugs, such as a cast iron bridge plug, rarely release due to earthquakes. We have studied this possibility for several years, and I do not know of an earthquake ever causing a properly plugged well to start leaking. We do not locate our wells near faults, if possible. All the faults in the areas where we will be drilling are dormant. If a fault were to cut a well, the well would be effectively sheared off. We have studied wells in California where there are active faults that have cut wells, and there has been no leakage from any of them.	L
Oil Spill Prevention & Response	How do you clean up oil in ice?	We have had opportunities to clean up oil during small spills and field trials in ice; however, because we have never had a significant spill in the Arctic, we have not tested our large recovery systems under such conditions.	H

<b>Issues</b>	<b>Comments</b>	<b>Shell Response</b>	<b>Mitigation Measures*</b>
Oil Spill Prevention & Response	Do these rope mops work?	It is 20 feet across, 20 feet above the water and has 100 feet of mop.	H
Oil Spill Prevention & Response	How do you clean oil? How heavy is the skimmer?		H
Oil Spill Prevention & Response	Is the casing flexible?	Yes. There is a certain amount of flexibility in the pipe. It will bend a certain amount.	N/A
Oil Spill Prevention & Response	What is the length of the booms? How do these booms work?	500 – 1,000 feet is typical for towed U-configurations. When operating with an open-apex system to deflect and release oil at the bottom of the U-configuration, we might use enough boom to achieve up to 750 foot-wide openings to encounter the oil.	H
Oil Spill Prevention & Response	With the currents you will not be able to use your booms.	Currents and ice create enormous forces and challenges so that you don't attempt to control them – you work with them and not fight them. We don't try to drag the ice, you let the boom move with the ice and the ice helps to thicken the oil so you can pick it up better or burn it. With burning you have smoke and that's ugly, but you have to think of the trade-offs. We consider carefully, well in advance, the trade-off of smoke for a few hours in the air, versus not burning that oil, and risking it being in the water or approaching land over a much longer period of time.	H, and I
<b>Quality of Engagement:</b> Insufficient	You talk about this exploration drilling over and over. You might pollute the ocean. You might spill oil and kill the fish. We talk about this over and over.	Thank you for your comment.	H, K and and L
Positive/Feedback	The federal government sold the leases and Shell has to sign a CAA as insurance. They have a policy and money in place, if they spill in the ocean or hurt the ocean. Shell is good they	Thank you for your comment	A, B, C, D, H, I, and L

Issues	Comments	Shell Response	Mitigation Measures*
	<p>sign the CAA, the others do not. They have money to mitigate our hunt. They give money for gas and other things for whaling. Whaling is very expensive. They know this and they are studying the ocean. The federal government gives them the permission to do this in the ocean. The federal government has rules and regulations and they will sign the CAA.</p>		
<p><b>Threat to Subsistence:</b> Marine Mammals</p>	<p>Vessel traffic adversely impacts the whale hunt. He understands that we will leave on August 24<sup>th</sup>. Suggest we contact other vessels in the area not associated with our drilling program to request they stay out of the area as well (e.g. Crowley). They do not curtail their operations during whale hunt. May need to be educated and get some encouragement from Shell to stay out of the hunting area for time.</p>	<p>Thank you for your comment.</p>	<p>A, B, C, D, E, and F</p>
<p>Terrestrial Wildlife &amp; Habitat</p>	<p>No wonder we don't have caribou, because of the helicopters.</p>	<p>They signed the CAA and agreed to fly 1,500 feet, they will fly over the land to the east and then go straight out.</p>	<p>A, B, C, and E</p>
<p>Terrestrial Wildlife &amp; Habitat</p>	<p>Can you explain the helicopter route?</p>	<p>Caribou migrates at the coast line, so we agreed to fly.</p>	<p>G and J</p>
<p>Terrestrial Wildlife &amp; Habitat</p>	<p>1,500 feet is loud.</p>	<p>The Federal standard is 500 feet and Shell is going at 1,000 feet more.</p>	<p>G and J</p>
<p><b>Value Proposition:</b> Jobs</p>	<p>Will you be hiring MMO's from the villages?</p>	<p>Yes. We try to hire the best people we can and the local residents provide the best information available about the areas where we will be working.</p>	<p>E and F</p>
<p>Jobs</p>	<p>We want to have people hired from here. You should come here to train people.</p>	<p>Thank you for your comment.</p>	<p>E and F</p>

Issues	Comments	Shell Response	Mitigation Measures*
Jobs	Give Kuukpik a call, I will get people certified to be MMO's.	If the Nuiqsut Whaling Captains would recommend people from the village to be MMO's that would be very beneficial.	E and F
Jobs	I know there are people that moved to Anchorage and are MMO's, they still have the knowledge and are still qualified for the jobs.	Yes, we agree. Again, if the whaling captains recommend them we would be delighted to talk to them about work regardless of where they live.	E and F
Jobs	These jobs are posted up and because there is a urinary analysis people are not willing to apply for them.	Thank you for your comment.	E and F
Jobs	I agree that most people here in Nuiqsut's biggest problem is that they cannot meet the requirements.	Thank you for your comment.	E and F
Jobs	Would like information about employment and a contact with Shell to discuss this. (erica_k830208@hotmail.com, (907) 590-3830, and (907) 480-2007).	Thank you for your comment.	E and F

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**2011 Proposed Mitigation Measures**

- A-Communication Plan for avoiding conflicts with subsistence users.
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- E-Subsistence Advisors based in Chukchi and Beaufort Sea Villages and Kotzebue
- F-Marine Mammal Observers
- G-Robust Marine Mammal Monitoring Protocol
- H-Oil Spill Response Fleet on standby 24/7 near drilling location
- I-Real time Ice and Weather Forecasting
- J-Crew change by helicopter and collaboration on routes to and from shore base
- K-zero discharge of: drilling fluids and cuttings after the 26-in casing; gray and treated black waters; bilge and ballast waters
- L-Enhanced blowout prevention and mitigation measures (i.e., second set of blind shear rams, increased frequency of BOP testing, redundant ROV hot stab panel, capping stack and containment system, and relief well plan with designated standby relief well drilling unit).



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**Kisik Community Center, Nuiqsut, Alaska**  
**March 24, 2011**

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William Hopson Jr					



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Jepkei Soralik		PO BOX 89-075			

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Issues	Comments	Shell Response	Mitigation Measures*
<b>Operational Impacts:</b> GOM Macondo	Why did it take so long in the GOM? Won't that happen here?	Our oil spill response fleet will be on site within an hour. BP's had to be mobilized from long distances.	H and K
GOM Macondo	How did those deaths occur and could that have been prevented?	That was a sequence of errors that broke every level of prevention.	H and K
Oil Spill Prevention & Response	Our water is much colder. How do you plan to handle that for oil spill response?	Our technology has to be designed for the service and we have practiced using this equipment in cold weather climates around the world.	H and K
Oil Spill Prevention & Response	What will the containment boom do in our currents?	In 120 feet of water the oil will come to the surface very quickly and we have learned to work with the ice, not against it.	H and I
Oil Spill Prevention & Response	How big is the rope mop skimmer?	It is 20 feet across, 20 feet above the water and has 100 feet of mop.	H
Oil Spill Prevention & Response	What if the oil is trapped under the ice?	New ice will grow and entrap the oil and then we can track it. In the spring, the ice will migrate to the surface of the ice where it can be skimmed or burned.	H and I
Oil Spill Prevention & Response	Were all the oils spills you have worked on Shell's?	No, they weren't Shell's.	H and K
Oil Spill Prevention & Response	Location of domes, quantities, how many response vessels per drilling platform.	It's not about the quantity of ships, but the quality and appropriate use of ships. We have much more storage capacity than is needed based on current understandings of potential recovery.	H and K
Oil Spill Prevention & Response	Where are you planning to drill and how far from this community?	92 miles from Pt. Lay.	NA
<b>Permits:</b> Process	How many companies and agencies are involved?	Coast Guard, BOEMRE, NSB, ADEC, UIC, Alaska Clean Seas.	H
Process	Do you have a permit?	Some activities have yet to happen because there isn't a permit, but many things are already in place because much planning has to be done beforehand.	H and K

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H-Oil Spill Reponse Fleet on standby 24/7 near drilling location

I-Real time Ice and Weather Forecasting

J-Crew change by helicopter and collaboration on routes to and from shore base

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**SIGN-IN SHEET – Point Lay Plan of Cooperation Community Open House Meeting**  
**Point Lay Community Center, Point Lay, Alaska**  
**March 25, 2011**

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Robert Sampson	—	box 59111 Point Lay AK 99759	833-0020	—	—
Marie Tracy	Mayors'	59029 Pt. Lay 99759	833-2428	—	marie.tracy @ north-slope.org
Suse Neakok	myself	—	—	—	—
Carl F Ha	—	—	—	—	—
Lily Annuskett	Cully Corp NVPL Council member	59011 Point Lay AK	833-2007	833-2528	—
Ben Hunsaker	NSBPD	P.O. 59042 Pt. Lay, AK 99759	833-2911	833-2727	Benjamin.Hunsaker @ North-slope.org
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Flora Hank	—	—	—	—	—



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Pearl J Neakok		Box 59064 Pt Lay AK 99759	(907) 833-1311		
Esther Tuckfield		Box 59049 pt. Lay AK			
Janet		PO Box 59055 Pt. Lay AK			
Carrie Henry		Pt. Lay, AK 99759 P.O. Box 59116	(907) 833-3300		
Ron MURPHY	CLINIC				
Keith Tracy	Water Plant	PO Box 59044 Pt. Lay, AK 99759			



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Gertrude Frankson		Box 59112			
Julius B Rexford Jr		BOX 59102			
Julius M. Rexford Sr		Box 59016 Point Lay			
Willard Alea Kok		59034 Point Lay			
Carl W. Hank		59107 Point Lay			
Brenton Rexford		Box 185T Barrow			
Muri Lusbonm		Bx 39016 Point Lay AK			
Cassie Fovell		Po Box 59078 Point Lay AK			



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Issues	Comments	Shell Response	Mitigation Measures*
<p><b>Credible Science:</b>                      Baseline Studies</p>	<p>There was a question about mitigation and baseline. A seismic program that lasted nine years running from the Canadian border to the Chukchi Sea. Every square inch was analyzed. In 1989, we noticed a lot of seals were sinking from malnutrition. We didn't know what it was from. We accused Red Dog Mine. It wasn't until a couple years ago that we learned about this nine year seismic program that resulted in skinny seals. Now we are going into the third and fourth year of seismic again. There are over 5,000 environmental studies that were done. I would like to see the data and see what the rate of recovery from that data is. Our tomcod has disappeared from our ocean around us. That is what our seals eat. They partially came back last year a little bit. I believed that was mentioned before. Why don't you answer the question before? How do we deal with trying to understand the impact of seismic over the years. NMFS is trying to list them as endangered at the same time they give authorization. I'm confused. How do you take this into consideration? Have you thought about the recovery of these animals from these activities? There's another series of seismic to come. But there was no explanation from NMFS or NOAA when they have questions from years ago. That's part of our food chain, we rely on those seals and they rely on those fish. Is this part of our mitigation?</p>	<p>We do conduct a very large and significant monitoring system of marine mammals and we talk about baseline studies, that benthic, plankton, in the mud on the bottom. We are looking at all of those. For our 4MP, we have recorders that are out there as well, we have airplanes out there, MMO's on every vessel. We've learned a lot over the last three years. The animals tend to move away from activities when there are activities that make noise. They move away for a period of time. Seals react less and bowheads react more. Bowheads get quiet and when the noise stops they will vocalize again. They will move away from noise to protect themselves. They move away and then they go back. I think it's important and it's part of the reason why Shell has entered into this agreement with the NSB, to hear the concerns from the people in the villages and shape science to their concerns. We are getting better and better to reacting and understanding concern. I wasn't here in the 80's and 90's. We have Subsistence Advisors in each of the communities to hear these kinds of things too.</p>	<p>E and G</p>
<p>Baseline Studies</p>	<p>Your studies are done on the areas where you've done seismic after?</p>	<p>We've done seismic at some of these locations. In the Beaufort Sea, we did the studies before the seismic there in some of the locations. Some of the areas we've done studies. For example to answer your question, we did seismic in Burger, we did not do seismic in Hammerhead.</p>	<p>N/A</p>

Issues	Comments	Shell Response	Mitigation Measures*
Baseline Studies	That sounds like you are at least looking at it.	Thank you for your comment.	N/A
Baseline Studies	It could mean a case in 15 years?	It would mean a case in 30-50 years. Based on wells that we've drilled here we've seen 3-4 times less pressure than Macondo.	N/A
Baseline Studies	The formation out there is different than Cape Lisburne?	Some of the Lisburne. I don't know much about that and it doesn't seem to be an issue with what we're doing. There is nothing wrong or particularly difficult about where we're drilling.	N/A
Baseline Studies	Can you acknowledge what type of current is there? A whirlpool or	We've been doing several things. We've for the last three years had instruments that have been out all year round. Measuring currents even under the ice. We've deployed a met-oceanic buoy that measures the currents. We've worked Oceanic.	N/A
Baseline Studies	Have there been any fluctuations of ice in that area? I've seen publications of the National Science Foundation that we can compare with that data in the past few years.	We're required to do ice gouging studies. We're getting an understanding how frequently ice gouges occur for 15-20 and even 100's of years and looking at detail.	N/A
Baseline Studies	And you have that kind of ice gouge data available?	Yes.	N/A
Baseline Studies	How about the NS is known for having fluctuating pressures?	We don't share that opinion. There are other areas that have unknown pressures and fluctuations. Typically when you drill in an area that has been drilled before, and you can run into that. That will not be our case.	N/A
Baseline Studies	Have there been any studies on radioactive plankton?	I don't know. I'm sure there have been oceanographic studies in the 60-70's when they were doing nuclear testing.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
Baseline Studies	There are 90 wells in the McKenzie Delta. How many of them were Shell's and what is your experience with them?	Not sure, that would have been operated by our Canadian Group.	N/A
Biological Environment	How deep down at the seafloor will you be drilling?	It's at 120 feet to seafloor.	N/A
Biological Environment	Is this for every hole you drill and how many will that be?	Yes. In the Chukchi Sea drill possibly three and in the Beaufort Sea it's two wells each year.	N/A
Biological Environment	Can you explain how they are the same temperature all year around?	Have you ever gone swimming and it was warm at the surface until you go deeper and you suddenly hit a layer that is cold? Water forms layers called thermoclines that may be warmer or colder and they don't tend to mix unless they are stirred by the wind. So, even if it is very cold on the surface deeper layers may not be that cold because of layering and a lack of mixing.	N/A
Biological Environment	Is there any ice on the ocean bottom?	No, not at those water depths.	N/A
Traditional Knowledge	If you're talking shallow waters in the upper part of the world, there was a lot of land before and it eroded and there is ice coming in. There is erosion along the coast of Alaska.	Thank you for your comment.	C and E
<b>ENGO Opposition:</b> Partnerships	(Question is directed to Earl Kingik) Who brought you here? There's a company here to talk to the community. I haven't seen you for a long time and every time there is industry here you are here. We all don't have jobs and it takes money to travel. You said you were going to follow them around.	I work for Alaska Wilderness League. I work for a Liaison Member to DC to educate our Congress and our House of Representatives to ... We cannot let people to push us around anymore. Our aunties and uncles told us to protect our way of life and culture. It was good to see someone from Point Hope go out and do a little tally and say you are invited to tonight's meeting. Maktak or money? Lots of people say maktak. We have a hard time and we want to protect our way of life. Our language is disappearing. Our culture is disappearing. I am here because I love my people.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
<b>Offshore Education:</b> Technology	I'm concerned about Santa Barbara. How was that plugged and was that plugged at all? My understanding is that the ground tore.	1969, it was a completely different type of location. I typically know about the seeps that they had and the shallow wells. Natural seeps are found in that area of California. The Santa Barbara event drove changes in the design and hardware that is installed on wells to prevent that type of incident.	K
Technology	How would you cap that Santa Barbara well?	The Santa Barbara well was handled by the operator in coordination with the regulator.	K
Technology	Can you explain what happened to that?	Unocal was the operator, you have land movement and shifting in the area that damaged the subsea of the casing itself. It is also a heavier type oil. It was pretty close to shore. It was in 1969, lots of regulations were changed.	K
Technology	How did they stop the flow at Santa Barbara?	It required well intervention.	K
Technology	What does a formation mean?	More of a solid than a rock.	N/A
Technology	What is a rig?	It's our drilling ship.	N/A
Technology	After that you will be able to develop, for sale?	It will be 10-15 years to development. We're only doing exploration. We drill, look at the results of the wells and look at the project to see if it is supportable. From 7-10 years to develop the project from that. 10 to 15 years. It's a long time away from producing.	N/A
<b>Operational Impacts:</b> Discharge	I understand that the there is no pollution discharge in the Beaufort Sea, is there one in the Chukchi Sea?	Shell has committed to a zero discharge of muds and cuttings and sanitation in the Beaufort Sea. That is our choice; we have not gone to that in the Chukchi Sea. We don't have a zero-discharge policy in the Chukchi Sea today. We have a zero harmful discharge in both seas.	N/A

<b>Issues</b>	<b>Comments</b>	<b>Shell Response</b>	<b>Mitigation Measures*</b>
Discharge	Why is there zero discharge in the Beaufort Sea and zero harmful in the Chukchi Sea?	All of the discharge is not harmful. In the Beaufort Sea it is so close to the shore. It is not in the path of the migrating mammals and their food source in the Chukchi Sea.	N/A
Discharge	What is your discharge in three weeks? Zero harmful discharge is million gallons and barrels.	EPA allows 18,000 barrels a day, per well. Our discharge is less than 1% per well.	N/A
Discharge	Each day it will be 2,970 gallons per a day for three wells and it will be 30 days. That will still be a lot. Times three wells. The wells are drilled one at a time. How much discharge will you do per a day per a well? You said 180 barrels a day. It's pretty close to a million.	The way the drillrig works, it will set up in the Chukchi Sea and it will move to another well and drill. At any given time, there will not be more than one well in the Beaufort Sea. If there was more time it would.	N/A
Discharge	Are you including, the sanitation, the oil?	No oil, but treated discharge.	N/A
Discharge	When you flush it where does the drilling muds and cuttings go?	We went back to those wellsites and sampled the mud from those sites and the animals from those sites. You can tell that a well was drilled there. The main reason is because something that's used in this mud called Barite. Barite is a non-toxic agent that comes from the ground and it's put in the mud to make it heavy. Has anyone ever had a digestive tract x-ray? You drink barium, it's used medically, it's non-toxic. We've looked for toxic things in the mud and the animals and . . .	N/A
Discharge	Will you dump your mud off the ships?	There will be some residual chloride, but they will be diluted. Typically we are not dumping whole mud off of the ship. The mud that enters the water is separated on a Shell shaker, the mud gets reused and recycled and it is clinging and goes overboard.	N/A
Discharge	What did you say?	A community member is calculating the discharge total.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
GOM Macondo	Keep in mind, NSB only has 3-5 miles. The ICAS could do the same thing in terms of a science agreement. Work with tribes and work together and it will be easier. Man makes mistakes. Look at Japan. I seen the GOM and how bad it is. We are not ready yet. We will not be ready when time comes. That little boy (pointing at a boy in the audience) might be in charge of oil spill response and my granddaughter might be the president of Shell Oil.	I know you were there. It was very heartbreaking. I'm from the GOM and it was hard to watch. You prevent what happens. It was human error, it could have been prevented. There are no guarantees and there are risks. There are risks to everything. We would like to show you our capping and containment systems.	K
GOM Macondo	Explain how you have ice at the bottom and the temperature is the same as the GOM.	We have instruments that are constantly recording the temperatures. When the air is really cold at the surface, but at the bottom it does not change much. The currents are coming from the Bering Sea and the Pacific Ocean. Even though you get a cold surface temperature. Ice floats, so there would not be ice on the bottom of the ocean. There could be gas hydrates, which are frozen methane because of the high pressure. Since there is no sunlight that penetrates to the deep ocean, there is nothing to warm the water, so it is very cold at deep depths but it doesn't freeze.	N/A
Ice Management and Monitoring	Can you imagine that kind of weather with a couple hundred piles of ice?	It would not happen here.	I
Ice Management and Monitoring	What kind of winds and how fast is that ice traveling (Sakhalin platform in ice video)?	That's real time.	I
Ice Management and Monitoring	What if you have had 90 foot seas?	You won't have that here. It is 15 years away at the soonest. You have to design a structure with engineers that have arctic experience.	I
Ice Management and Monitoring	I want to share a story, where we have a big storm and the ice covered the whole village of Point Hope. You should not underestimate the power of the ice flow.	Thank you for your comment.	I

Issues	Comments	Shell Response	Mitigation Measures*
Ice Management and Monitoring	Have you ever considered using NOAA for ice monitoring?	We do use NOAA resources like the MODIS information. We also use the NOAA Ice Center. But we also do a lot of processing that they don't do because we need more detail than they do. NOAA is very interested in getting the information that we have generated to improve their data set.	I
Ice Management and Monitoring	Where is T-3 it's a large piece of ice that ran ashore five years ago and it broke itself free? It's multiyear ice that has a flow station on it?	There are several ice islands that are in circulation in the Arctic. We are helping to fund drift buoys that are keeping track of where they are.	I
Ice Management and Monitoring	Can we have access to your ice monitoring? It would be very helpful to our whaling.	Yes. There will be a website.	I
Mitigation Measures	What is the meaning of mitigation? I want to know this in Inupiat?	The definition to minimize to lower or decrease any impacts that would occur because we are here.	A, B, C, D, E, F, and G
Oil Spill Prevention & Response	How long will the transit will that take. If you have an accident in the Beaufort Sea and you have to travel from the Chukchi Sea?	Three days. But there will be oil spill response vessels and equipment there with each drillship. We have very big vessels with those drillships. Some of the people in this room went to see one of the drillships and one of the oil spill response vessels.	H and K
Oil Spill Prevention & Response	Are the wells there already?	Yes, they were permanently capped.	H and K
Oil Spill Prevention & Response	You mentioned your BOP will be tested every seven days. Have you started and do you know if they will work in our arctic environment?	When the wells were drilled in the late 80's and 90's they worked fine.	K
Oil Spill Prevention & Response	What is the water temperature difference, and how do the divers dive in the winter?	We are only going to be doing it in open water. We would not be doing it when we have ice or solid ice. At the surface it is much different. In the GOM at 5,000 feet below the sea level it is only 1 degree or so different.	H and K

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	How will you handle divers in the development?	Water temperature is about one degree or so different.  The BOPs work in Sakhalin and the North Sea.	K
Oil Spill Prevention & Response	We've heard about many oil spills off Norway.	The recent oil spill in Norway wasn't from drilling. It was from a cargo ship. It was fuel onboard the cargo ship.	H and K
Oil Spill Prevention & Response	That's going to the seafloor at 120 feet for the same water temperature?	Yes.	N/A
Oil Spill Prevention & Response	You are talking about drilling in 2012, how long before you get to the bottom and put out the BOP, will it be twenty days?	To get to where we put in the BOP it will be ten days.	K
Oil Spill Prevention & Response	How long after that will you finally get the oil?	Roughly twenty more days.	K
Oil Spill Prevention & Response	For five years, every time they come they keep bringing different people. Kind of a waste of our time listening to you guys coming here to talk about BOP, prevention taking place, by that time most of us will be gone. If we are a body to give you authority, we will be no less. We wouldn't be thinking about our children and grandchild, they will be observing this after we're gone. Most of us. I would never say, "Hey come and do it now." You say you have safeguards, I cannot say yes to it myself. I am more less going to kill my children and grandchildren. Industry would come and develop and I would be killing my children and grandchildren.	Thank you for your comment.	H and K

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	How do you address the rubber seal in the pipe, that for some reason was to tighten and when they pulled the pipe out it tore the seal. And it came out of the rig? How will you address that? Is there some sort of preventative measure?	They have a diverter that was capturing. The biggest reason that failed, they should have recognized that they had gas above the riser.	K
Oil Spill Prevention & Response	What do you have to detect or monitor that?	To catch that influx get into the riser. That's much easier to do in shallower water. They were in 5,000 feet of water. Shell Layers of Prevention slide. We have instrumentation that would detect that immediately to hold those formation fluids back. The third thing we have is mechanical barriers. On phase four we have a capping and containment system. Our biggest priority is to not let the influx enter the well and happen. We do not plan to get any oil out of these wells.	K
Oil Spill Prevention & Response	If it did leak and it exploded, that oil is going to move fast and it will spread. What type of mitigation or agreement is there to address Pt. Barrow? It's going to hit them before it hits us. Will they come over here to do their whaling?	We have a 25 million dollar good neighbor policy. It is administered by Wells Fargo Bank it is available for immediate use for any kind of verifiable. When you take that money it does not prevent you from taking legal action. You can still participate in a class action suit. You could still take legal action you want.	H and K
Oil Spill Prevention & Response	Where will the Barrow whalers go whaling?	You're presupposing the oil will go to Barrow. I can't do that.	A, B, C, D, E, F, and G
Oil Spill Prevention & Response	Where would the Barrow whalers go?	We don't discuss that in the CAA negotiation. It's never come up with the Barrow Whaling Captains Association.	C
Oil Spill Prevention & Response	What's going to happen to those Barrow whalers? That question was never answered. You're always welcome cousin to come, but we've never really seen it. When was that agreement signed?	We just signed another agreement February of 2011.	C

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	Don't those currents go to Barrow?	Part of it. There's a canyon off of Barrow that is like a bathtub drain. The coastal current will come along the coast and towards Barrow. What's out at Burger, the Hannah Shoal pushes the water to the east and west of it. Jack you mentioned a good point about oil in the Gulf that spread through the water column and did not come to the surface because of the extreme depths. Since our water depths are so shallow in the Chukchi and Beaufort, oil will not spread through the water column and pop in another area. It will all surface near the drilling area where our response fleet will be able to capture it. Our first line of defense is the have spill response vessels.	H and K
Oil Spill Prevention & Response	I would like to thank my Tikigagmiut. It's important for our people, our community, our whaling captains. We have to remember what our elders said. Pete, the majority of us have bad hearing, we don't know what they're really talking about. You heard that elder it has to be in place. I make a recommendation you hire a venue and we would like you to hold your meeting at the Qalgi. Our city government needs money too. I would honor what our elder said. And the meeting was just starting too. I myself, a Tikigagmiut, hunter, Qagmaktuuq. I would say "No development." You show me where those oil spill response crews will come from. They will have two ships. I don't believe it will take three days to get from the Chukchi Sea to the Beaufort Sea. It is less than that. I took a kayak trip. It's good to see you in here, trying to protect our way of life. Pete heard me many times. I speak for these people, our people, the culture that I love the most. We don't know what is going happen with radiation with animals that is contaminated from Japan. The two year Pollock, we got many more. Those adult fish spend time here and go back to Bristol Bay	Thank you for your comment	H and K

Issues	Comments	Shell Response	Mitigation Measures*
	and make more eggs. No activity until you say we can all be protected. I'm a Tikigagmi. We are having problems, we have to be ready for radiation. There might be only three people that come, but they have to make a report. This makes my heart feel. You have an interest in our way of life.		
Oil Spill Prevention & Response	You actually know if the oil is heavier or lighter? What is worse for a blowout?	It's not a function of the type of oil, it's the pressure, the depth. The deeper the water depth the more issues you have access. Working on top of a 500-foot building opposed to a 120 foot building.	H and K
Oil Spill Prevention & Response	How long would it to take to make that decision to cap your well and move offsite?	In the worst case scenario it would take approximately 30 days to drill a relief well, however the capping operation would be much less.	H and K
Oil Spill Prevention & Response	We're talking about the BOP and we're talking about both safety's not working?	Yes, that is correct, but the likelihood of that happening is extremely low.	H and K
Oil Spill Prevention & Response	What's the first safety of the BOP?	We have the levels of prevention.	H and K
Oil Spill Prevention & Response	You said you'll drill three wells in the Chukchi Sea? That's not counting Conoco and the others?	That's correct. We don't know what their plans are.	N/A
Oil Spill Prevention & Response	So will there be companies planning to drill too?	Thank you for your comment.	N/A
Oil Spill Prevention & Response	If they had a spill would your equipment be available to them too?	We are talking to the federal government. We are discussing that they should have their own equipment.	H and K

Issues	Comments	Shell Response	Mitigation Measures*
Oil Spill Prevention & Response	I would like that an oil spill response would be a huge priority. I would think that you would work together.	We've raised the bar pretty high in OSR and the other companies should follow. If they want to go to the same high quality, we would be more than likely to discuss and share with them. I cannot promise anything.	H and K
Oil Spill Prevention & Response	Why can't work with the North Slope Borough? We in other communities when don't even see any of the contracts. Are the wells earthquake resistant? Due to global warming.	Thank you for your comment.	N/A
Oil Spill Prevention & Response	If there is an oil spill would you stop an oil spill by another company?	Let's say Crowley a company delivering fuel runs aground, we would turn around and help them. In regards to stopping our drill, we would have to assess. We do pick up oil as a routine day of business.	H and K
Seismic	I noticed reference to the Sakhalin Island, they were dealing with seismic at that same time. Those animals didn't have a place to go. It's a blanket inventory. We need to see where that seismic went on, to understand. We didn't know of all the seismic activity. We don't know what the rate of recovery is from this 3-D. There are exemptions from seismic activity. They're exempted from input. There's no recourse. No slowing down or taking another look at a significant impact. There's always a no-finding-of-significant-impact. I don't think Shell was involved, but it was done. And those impacts are there. We have concern of preserving and that our freezers remain at the same level not due to a lack of our knowledge. So that our recovery can take place. We don't want you to have such a big headache. The more that we state info. the less time we have to argue about it. I don't like arguing.	Thank you for your comment.	N/A

Issues	Comments	Shell Response	Mitigation Measures*
Seismic	One question I've been wondering it has to do with the affect on plankton from seismic activity. They are probably disintegrated at impact. Will it change their eating habits or ability to reproduce? You're dragging this machine along the whole ocean, it's been brought up but it is important and we need to find out.	It has been studied in experimental situations where they have an airgun in an enclosed area. Anything within 7 feet can be impacted, but beyond 6-7 feet there is not a noticeable effect. There is a global current that comes into the Chukchi Sea from the Bering. This is one of only a few ways that water enters the Arctic. The plankton that occur in the Chukchi Sea are essentially brought in from the Bering and grow and develop there. So, there is essentially a conveyor belt of plankton constantly moving through the system. If there were impacts they would be very short term as the system replenishes itself.	N/A
Seismic	Will it affect the feeding ground near Greenland?	The waters around Greenland are a mixture of Arctic outflow that mixes with currents coming up from the south. It is very similar, in that the plankton are constantly refreshed and grow rapidly during the open water periods.	N/A
Vessel Logistics	There is going to be a ship in the Beaufort Sea and in the Chukchi Sea and they both will be drilling? And there will be a big storm and they both will get in trouble. What will you have then?	The likelihood is that it will not happen.	I
Vessel Logistics	How far is the drilling rig from shore?	204 miles from Point Hope, 78 from Wainwright and 92 from Point Lay.	N/A
Vessel Logistics	How many icebreakers do you have and will you use? Are they American or are they foreign?	Each drilling vessel has one ice management vessel that is foreign flagged.	N/A

<p><b>Permits: Process</b></p>	<p>Do you have all your permits that are required to do offshore activities? Are you sure oil spill response will work? In the past, you just went right in there and started planning without our people. You have to get an IHA, CAA, and Clean Air is a big issue. Do you have all your permits in place? The government might say no, our people might say no. I want to make sure for my people here that you have your permits.</p>	<p>One of the ways we get permits is to come talk to you. There is not a federal agency that would issue a permit, if we didn't come talk to you. We don't have all our permits. We are here because you live on the Chukchi Sea. The federal government and Shell are here to make sure we are acting appropriately.</p>	<p>A, B, C, D, E, F, G, H, I, J, and K</p>
<p>Process</p>	<p>We're having this exploration up here in Alaska, but offshore exploration is not happening on the East or West Coast of the U.S. The eastern states like Rhode Island, the west coast said no. The U.S. Government honored that. Who said yes? We said no. We see this and they honor that and they won't touch. Is it the governor, the senator, the congressman. Those states they say no, they are not drilling over there. Who is saying yes? What's going on now? What did the U.S. Government honor the governor, State of Alaska, Tribes? What's the difference? Do you understand what I'm asking?</p>	<p>First of all, why the Chukchi Sea and Beaufort Sea, the scientist in the industry and government believe there is oil there. Today we discussed onshore, I would love to drill onshore, it would be much easier. We don't want to make things difficult. If we thought it was prospective, but the oil onshore is small quantity. The USGS looked at all the prospective areas. There is no further leasing on the West coast there is oil being produced. When one looks at those areas, the amount of oil is small in comparison to what we see in Alaska. I recognize the people in Point Hope, not all people, in other villages as well. We don't always get the same reception. The people of Wainwright, they're ok with what's been said. When they do polls in Alaska, three of every four people is in favor. That's the way it's worked. It's very important to us. There will never be a time in our lives where all people will agree with us. We can be responsible and drill our wells and work in an exploration process and to development process. We will never be successful, if we don't work with the communities. We will continue to come back and explain until we get a better understanding.</p>	<p>N/A</p>
<p>Process</p>	<p>In 2008, we had a lease sale on the Chukchi Sea. I protested the lease sale cause not even one cent will go to the State of Alaska. We won't even get any money. If you will give money to the State of Alaska and NSB and will you give money to the impacted communities? You gave how many millions to the NSB and State of Alaska? Can I have a big Seattle Seahawks stadium?</p>	<p>The money given to the Borough is meant to be shared with the communities. Concerned residents come to the committee and determine science. Shell is working with congressman Young and Senators Murkowski and Begich. All Borough communities will see significant amounts of revenue through property tax. The pipelines will come onshore and we will continue to pay property tax and put money into the economy that way. We will continue to work with ASRC and Tikigaq to put money in the hands of Alaskans, the Alaskans in this room. That's what we're trying to do.</p>	<p>N/A</p>

Process	NSB can't tax federal waters?	That is correct, but the NSB gets property taxes for pipelines and other facilities onshore.	N/A
Process	Who owns the OCS?	The Federal government.	N/A
Quality	The feds and industry don't have enough scientists and they are not ready.	Thank you for your comment.	N/A
<b>Quality of Engagement:</b> Feedback	To the young people, I want it on the record that we do have experts. I count 5-6 elders here.	Thank you for your comment.	N/A
Insufficient	I want to make sure that you honor the elders request and redo this meeting and because of their hearing issues. Many of them have hearing issues. They don't like to be told to sit here. We respect our elders. If you come into our community you must respect our community. Do an orientation to your staff. You don't disrespect our community. I will always oppose. I say it even now. I would never risk my food I eat.	We will hold another meeting with the proper equipment.	N/A
Insufficient	Is there a recorder? Does Shell have a recorder?	No we don't have one with us, we have staff recording comments and questions.	N/A
Insufficient	I'm an elder here. I tell you all to bring the proper equipment and stuff like that when you are going to hold a meeting. I can't hear nothing. I can't hear good. I just hear mumbblings. Get prepared first and talk to us. I would like to postpone this meeting until it's done with a PC system. Nothing wrong with that. You need loud speakers and stuff like that and we want the documents before ahead of time so we can review it. We so move.	We would be happy to come back later and keep going on with the meeting.	N/A
Insufficient	You guys are rich and could come back and forth.	The next time we come we will come with speakers and microphone. Because we have people here right now.	N/A
Insufficient	This is a second meeting that I've heard this complaint. This is what was said in Dutch Harbor.	Thank you for your comment.	N/A

Insufficient	There's no deal. I said it all ready.	We apologize for not having a microphone system. The principal just notified us that their system is down. We will bring a microphone with speakers in the future. There are many people here that have questions and comments and we are going to continue with the meeting.	N/A
Insufficient	Is this part of a POC that is required for your license? What evidence do you have that was asked as questions?	We've never been asked for a recorder and we can bring a recorder. We can send you a copy of the EP that documents all of these questions, our responses and the mitigation measures.	C
Insufficient	A recorder shows what questions have been asked. What is provided to the Feds and the POC is drawn up by your employee. We don't even review what is recorded. It is indisputable. There's something wrong with this. We always hear "We will get back to you." It's time to get beyond this arguing stuff. We need to get beyond this guessing game. I just wonder why you do this time after time without a recorder? It is so simple.	Thank you for your comment.	N/A
Insufficient	Jack has a very good point. You're taking us in circles and we do need answers. I agree with him. Our elders are the ones that need to hear this, we look for guidance from them. We need microphones.	Thank you for your comment.	N/A
Insufficient	All the last meetings that I've attended with industry, we've always had this problem. We have entities with recorders and loud speakers and microphones. If they were offered to be rented, I'm sure they would let you utilize these things. I've been to meetings where people have been able to talk right into a microphone. All you have to do is pay for it and utilize it.	Thank you for your comment.	N/A
Insufficient	Bring microphone system to the next community meeting.	Thank you for your comment.	N/A

Insufficient	Bring a recorder to the next meeting and send a copy of the transcript to the residents.	Thank you for your comment.	N/A
Insufficient	Use simple words in your PowerPoint and oral presentation.	Thank you for your comment.	N/A
Insufficient	I have trouble with the long words. Simple words would give us more understanding. Next time delete it and put simple words.	I will do that.	N/A
Positive/Feedback	Thank you for being here for the community. We've always had someone from the outside protecting our way of life. I have never heard of anyone that has come to explain how you will clean up oil spills in the ocean.	Earl said is it money or is it maktak. The question is do I need to choose? Instead we want people to say "Can I have both?" We want to work with the community for economic justice, where we're supporting people in their current lifestyles. Can I have both and can I take part in this and go forward? This is what we would want you to think about.	N/A
Positive/Feedback	I would like to thank you for continuing the meeting when an elder continued to tell you to stop or end the meeting. I know that this meeting helped inform me. The more meetings to inform our people the closer it will get to begin drilling.	Thank you for your comment	N/A
Positive/Feedback	First all I would like to thank Shell for visiting our community to try and explain your future operating plans and apologize for the few single minded who cannot go beyond their beliefs to even try to understand what is more than likely inevitable for Alaska's future. I worked last summer for ASRC as a Marine Mammal Observer both for Statoil and Shell and from my experience; I believe this can and will be done safely and efficiently as long as the planning is there. I look forward to possibly working again for Shell and will most definitely be a part of the operation for the long run. Thank you.	Thank you for your comment	N/A

Positive/Feedback	We thank you for doing this and helping it come together. There are protocols and guidelines. We need to do it along with Conoco and Statoil, it's better that way. We don't like to work by ourselves either. We don't know how many wells are being done by ConocoPhillips and Statoil. I don't know.	I appreciate you saying you appreciate all the good work that Shell, Conoco and Statoil have done together. We are really proud of our science program. It will have a lot of value in understanding potential impacts and climate change. We are closer now to understanding how this ecosystem works. We have a lot of information that we can provide to you.  I need to differentiate between exploration drilling and development. Exploration takes place in three months and number of years and 5,000 studies and ½ billion dollars. Development will require more work. The NSB will be a big help in incorporating the Traditional Knowledge. They will help in knowing what science we need. If we are ever successful.	N/A
Positive/Feedback	That's a good question. That's why we need these meetings to answer our questions.	Thank you for your comment.	N/A
Positive/Feedback	It's not just maktak. It's all the marine mammals in the sea.	Thank you for your comment.	N/A
Protocol	Where there any follow-ups or actions that came up from the last meeting? You should start off each meeting by going through them before with the community.	We document each of the comments and questions and they get put into tables organized in topical order with the comment/question and the response and if there is a mitigation measure that needs to take place it is recorded.	C
<b>Threat to Subsistence:</b> Marine Mammals	How do the animals get Barite in their system?	We've taken very detailed samples. We've gone back and looked and it was done 20 years ago. Today it is even more strict. If we discharge, we discharge much less.	N/A
<b>Value Proposition:</b> Development	Com Centers	Is it your preference that we build our own structure?	A
Development	No. I have no preference.	Our preference would be that we use an existing structure and pay a contract to a local organization.	N/A
Jobs	We want to be included.	Thank you for your comment.	C, E and F

Jobs	What are the Tikigaq contracts?	Waste disposal and compliance.	N/A
Revenue Sharing	When you start drilling, is there any way that Shell can set up shares for the project to the people other than the corporations? Some of the native corporations do not give back to the shareholders. If our people can get shares for the areas that are being drilled, this would be a good way to give back to our people. A lot of times, we don't see any of the money so this would be a good way to give back to the people. For those enrolled in the native village.	Thank you for your comment.	N/A

Notes:

\*Mitigation Measures are only assigned to applicable comments.

"Not applicable" (N/A) is used to designate comments that do not require mitigation measures as a course of action. See [Mitigation Measures Index](#) definitions according to assigned letter.

**2011 Proposed Mitigation Measures**

A-Communication Plan for avoiding conflicts with subsistence users.

B-Collaboration and Communication with Whaling Associations

C-Plan of Cooperation (will work to obtain a CAA)

D-Will honor 2010 Camden blackout dates for Nuiqsut and Kaktovik whaling.

E-Subsistence Advisors based in Chukchi and Beaufort Sea Villages and Kotzebue

F-Marine Mammal Observers

G-Robust Marine Mammal Monitoring Protocol

H-Oil Spill Response Fleet on standby 24/7 near drilling location

I-Real time Ice and Weather Forecasting

J-Crew change by helicopter and collaboration on routes to and from shore base

K-Enhanced blowout prevention and mitigation measures (i.e., second set of blind shear rams, increased frequency of BOP testing, redundant ROV hot stab panel, capping stack and containment system, and relief well plan with designated standby relief well drilling unit).

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SHELL EXPLORATION AND PRODUCTION COMPANY  
SIGN-IN SHEET - Point Hope Plan of Cooperation Community Open House Meeting  
Tikigaq School Multipurpose Room, Point Hope, Alaska  
March 28, 2011

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SHELL EXPLORATION AND PRODUCTION COMPANY  
SIGN-IN SHEET – Point Hope Plan of Cooperation Community Open House Meeting  
Tikigaq School Multipurpose Room, Point Hope, Alaska  
March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Dorcus Rodc	Tikigaq	POB468	368-2229	—	—
Jack Lar-	pt Hope	Box 73	—		
Bessie Kowunne	TC	Box 240	368-2304		
Peter Frank	TC	Box 102	368-0661		
Edw. N. [unclear]		P.O. Box 282			
Henry Attungang III	Tikigaq	P.O. Box 133			
Kloreen Koonub	Tikigaq	P.O. Box 85	—	—	—
Ricky N.	tikigaq				
Raymond Att.	Tikigaq	P.O. Box 133			



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March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Aggie Attungana	PHO, AK	P.O. Box 133 Point Hope, AK			
John Long Jr	PHO ALC	Box 93 PHO AK 99766			
Aaron Ohtella	PHO, AK	Box 251 PHO AK 99766			
Donald Long Jr	PHO, AK	Box 204 Pt. Hope, AK			
Doris Gasbore	PHO				
Susan Kulk	PHO	PO Box 301 Pt. Hope AK			
Henrietta Attungana	PHO	P.O. Box 133 Pt. Hope AK			
Claudia Koonalok	PHO	P.O. Box 239 Pt. Hope, AK			
Elice Nash	PHO	P.O. Box 206 Pt. Hope, AK			



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Tikigaq School Multipurpose Room, Point Hope, Alaska  
March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Joseph Towksj'hea	TIGIQA	P. O. Box 7c			
Ray Hooper		PO Box 352	907 444-5611		hooper@hotmail.com
Ned A. Weber Sr		Box 106			
Stewart Liston					
Dolly Ootolik		P.O. Box 348			
Mitchell		P.O. Box 100			
Lakisha Johnson		P.O. Box 303 Point Hope AK 99766	368 2428		
Rosella Stone					
Kathy Tingook		P.O. Box 12 Pt Hope AK 99766	368-2420		



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March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
EARL KING	AWL	3240 Penland Perleyway Saag An. 201	575-2272		earl_king@alaska 2010@alaska inc
Kenneth Attungua		PO BOX 157 Point Hope AK			
TOMI LORD	Box 1586 B	Box 1589 Barrow, AK	852-3670		
Eric Ushkul	Box 313	Point Hope	368-1514		
Rhoda Long	Box 303	PO Box 303	(907)368-130		
AQQI Hank					
Morris Nasneck Pak		Box 131			
Lydia Nashokpule	#10	PO Box 292	412-0893		
Boris Ipabok		PO box 292	412-0893		



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March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Jim Nash	Jim Nash	P.O. Box 145 Point Hope, AK 99706	907-368-2060		
<del>George Rankin</del>	<del>George Rankin</del>	Box 3	907-368-1284		
Cloyd Vins	Self	Box 124	368-5685		
Leonard Wood	Self	Box 194	NA		
Loretta Nashokpek	Self	PO Box 62	368-2663		
Jane NTSKawerms	SELF	P.O. Box 62	368-2662		
Joe Frank	self.	P.O. Box 186	368-2727		
Peggy Frankom	self	Box 467			
Lily Barger	self	PX 152 Pt Hope			lilytuz@ hotmail.com



SHELL EXPLORATION AND PRODUCTION COMPANY  
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Tikigaq School Multipurpose Room, Point Hope, Alaska  
March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Leonard A Garger	Point Hope	Box 152	368-5455		leonard.garger@alaska.net
Hazel C. Stullik		Box 367	868		
Diantha Oktilik		Box 307			
MORRIS B. Quick	PHO	Box 28	368-2822	—	—
Sally Bethel	U	Box 35	850-4001		
Minne Johnson	PHO	Box 171	268-8551		
DAN MORENO			738-2229		moreno-daniel@att.net
Gail Gallahorn	PHO	BX 333	368-5916		
JAKI S. Tureth	PHO	Box 215			



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March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Irma Hunnicutt	PHO	PHO Box 232			
Hannah Teayomeak	PHO	Box 24			
Diana Oletollek	PHO	Box 66	⊖	⊖	⊖
Jessie Annuk	PHO	Box 112	368- 2640	—	—
Lennie H. Neshookpak	PHO	Box 292	368- 0171		
Shawn Stone	PHO	Box 332	368- 1582		
Brett Oletollek	PHO	Box 66	368- 1530		
Molly Annuk	Self	Box 208 PHOAK	368-2531		
T. H. Neshookpak	PHO	Box 153 PHOAK	368-0000		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Eli Basth	self	P.O. Box 289	(907) 368-2102		
Elizabeth Dvick	Self	Box 162	368-0320		
Heather Minix					
Amber Journey	Self	Box 84	368-2015		
Winey Frankson	self	Box 48	368-1348		
George Vincent					
Joe Omnik	Self	Box 208	368-4542		
Ella Omnik	Self	Box 184	368-2143		



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March 28, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Pearl Saeye		P.O. Box 254	388-3850		
Abraham Koumarr		P.O. Box 242	368-2833		
Art Committee		P.O. Box 222			roomtemp41 @yahoo.com
Isaac Allungam		P.O. Box 26	368-2373		
Brittany Oktolik		P.O. Box 348	368-1299		

Issues	Comments	Shell Response	Mitigation Measures*
<b>Cost/Access to Energy:</b> Cost/Access to Energy	Does North Slope oil cost more than other places?	Yes – I can't answer why fuel prices are high in rural Alaska. There have been lots of questions about Native Alaskan populations and we want Native Alaskans to be a significant part of our operations. In Brunei, where I worked before I came here, they had 95% local hire. We call this economic justice. There is a lot of discussion about environmental justice but longer term economic justice is just as important.	N/A
<b>Operational Impacts:</b> GOM Macondo	How did the big spill in Mexico affect everything?	It was a catastrophe for the oil and gas industry. We were very close to drilling last year and had conducted over 450 stakeholder engagements and the more we spoke with communities, the more people felt comfortable with Shell. The president put a moratorium on offshore drilling and the fallout from that accident has continued to follow us. We have to show what we can do not just talk.	H and K
GOM Macondo	The biggest fear people have is a repeat of the GOM accident.	We hear that a lot, people are fearful of oil spill and we have a spill response program to talk about tonight. And one of the most important things is prevention.	H and K
Oil Spill Prevention & Response	Will you have a team ready in case of spill and if you do, do you provide training?	Yes all the personnel have to be trained; We sent some of our personnel from up here to work on the BP spill and they gained experience.	H and K
Oil Spill Prevention & Response	What if you have a spill at the end of the season?	Our equipment can work in a certain amount of ice. We will attempt the capping and containment first and we should be able to control the well before ice becomes too much of a problem.	H and K
Oil Spill Prevention & Response	The ice might help with containment.	Yes the ice can actually help corral the oil.	H and K
Oil Spill Prevention & Response	Are the man made islands safer than the platform?	We really can't use man made islands in water depths higher than 20 feet so when we find production we use what is called concrete gravity based structures.	H and K
<b>Quality of Engagement:</b> Positive/Feedback	This is an excellent presentation very thorough.	Many of the people that helped in the Gulf were from Alaska were from the NANA Region.	N/A
<b>Threat to Subsistence:</b> Marine Mammals	What about whaling season – are you going to stop drilling during the whaling season?	We will have blackout dates in the Beaufort Sea on August 24 <sup>th</sup> and move our drilling rig and boats far offshore and wait until whaling is finished. In the Chukchi, we will continue to work because it is very far offshore.	A, B, C, D, E, F, and G

Issues	Comments	Shell Response	Mitigation Measures*
<b>Value Proposition: Jobs</b>	Do you have any Native people working for you?	We don't have many jobs available because we have not been able to move our program forward, but if we have a drilling program, there will be many jobs and we want Native Alaskans to have most of them.	E and F
Revenue Sharing	Can you give a projection of how Shell's success would affect the NWAB?	There isn't revenue sharing in the OCS but we looked at impacts to the state and nation over 50 years. We found that regionally there would be 4 Billion dollars revenue from taxation and other benefits but the biggest benefit is jobs resulting in \$145 billion over that timeframe. It would also impact the whole country.	N/A
Workforce Development	One of the benefits is employment and career opportunities and professional careers. At what time does Shell imagine a project that caters to NWAB and NSB people? There should be a mechanism that kicks in that helps this region because there aren't enough people to fill these jobs. As an Alaskan, I'd like to see this benefit Alaskans first.	Shell has started a program called Avante Guard which certifies teacher's aides with UAA to give them the credentials they need to become professional teachers. We are also working with a group called Polar Pairs which is an exchange program with teachers in Aberdeen. We also support ANSEP. I took a call from Kotzebue about jobs for roustabouts and I also hope there will be jobs in engineering, geologists. We are also trying to attract Native Corporations to build capacity to work offshore. We don't have a large pie now without a drilling program but we want to provide jobs.  We have identified that 5 <sup>th</sup> graders are the people that will take advantage of the jobs we will have to offer. The longer we wait, the further out that target moves.	N/A

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SIGN-IN SHEET – Kiana Plan of Cooperation Community Open House Meeting  
Kiana School Gymnasium, Kiana, Alaska  
March 29, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Rose A. Wood		P.O. Box 18 Kiana AK, 99749	475-2028		
Carl Carlson		Box 83 Kiana			
Gilbert Thomas		Box 08 Kiana	475-5104		
Lein Atoruk		POB K3	475-2351		
TERESA Smyke		u ll	ll ll		
Eva R Wells		Box 76 Kiana AK	475-1988		
Meritha Capelle		Box 22 Kiana AK	378-8748		
Sylvia Sheldon		Box 49 Kiana AK	412-1247		
Lee Stachel		Kiana	475-2101		



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March 29, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Raven Jackson sr		P.O. Box 63	475 5006		
Annie Reed		Box 33	475-5060		
Jack Reed		Box 33	475-5060		
William Gooden		Box 58	475-2211		
Thomas W. Smith		P.O. Box 123	907 475 2237		
Elizabeth Bayou		Box 73	907 475-2147		
Ben Atoruk		Box 73	907 475-2147		
Daisy Johnson		Box 42	475 5016		
Leon Johnson		Box 42			dla'jsr@hotmail.com



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**Kiana School Gymnasium, Kiana, Alaska**  
**March 29, 2011**

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Bertha Barr		PO Box 103 Kiana AK	475-2504		
Kayana Barr		PO Box 103 Kiana AK	475-2504		
VPSO Steven Dugg	NWAB	Po Box 143	475-5014	475-2187	snugg@nwabco.org
Louise Reed	City of Kiana		475-2136	475-2174	
Nela Johnson	City Council	54	475-2352		
Joche Johnson	elders council	54	475-2352	—	—
Tom Johnson	NWAB	54	475-2352		
Trukuk Gerhardt-Gyus					
Josie Brower	City of Kiana	154 IAN, AK 99749	475-2161		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Ivory Gerhardt- Cyrus		P.O. Box 15			
Tom Cyrus		P.O. Box 15	475-5015		tomcyrus@alaska.com
Isabelle GC		P.O. Box 15			
Donald Smed		Box 148			
Dally Smith		Box 149	907 475-2186		
Mabel Good		Box 104	475-2200		
Annie Barr		Box 154	475-2141		
Issac Jackson		Box 07	475-5398		
Paula Oubroster		Box 43	475-2508		



Kiana 99749

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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Edward Gooden		Box 58 Kiana	475-2211		edwardeddie66@hotmail.com
Linda R Stotts	KTC	Box 69 Kiana AK 99749	907-475-2109		environmentalekatyaag.org
Ruth Sandvik	Blanken Ship Trading Post	Box 1 Kiana AK 99749	907-475-2177		
Jason Turk	VPSO program	po box 143 Kiana AK	475-5024		<del>jturk</del> @nwabor.org jturk
Nelson Walker		Box 96 Kiana AK			
Debra Reed-Thomas	Inupiaq	Box 8 Kiana AK	907-475-103		—
Blanche Cook		Box 4 Kiana AK			
Charlannaghe Reed		P.O. Box 13 Kiana, AK 99749	907-475-5006		
Dale Stotts	Kiana Traditional Council	PO Box 61 Kiana 99749	907-444-2841		grantwriter@katyaag.org



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Katie Ankpuk			475-5119		
Evelyn Johnson		Box 187 Kiana AK			
Kristy Walton		Kiana AK	475-2103		
Naomi Harris		PO BOX 126 Kiana AK	475-5082		
Colleen Westlake		11	475-1963		
Daniel Atoruk		P.O. Box 45 Kiana, AK	475-2102		
Eugene Douglas		Box 73003 Shungvak AK	437-5139		
Ida Jackson		Box 18 Kiana AK			
Pina Atoruk		Box 102 Kiana, AK			



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Lee Barr					
Lorena Walker		Box 40 Kiana, AK			
Tina Outwater		Bx 43 Kiana, AK			
Pauline Darden		116 Kiana, AK			
Lyla Ahwinone		65 Kiana AK			
Thomas Jackson		- Kiana, AK			
Ariene L. Richards		Kiana, AK 99749			
Irene Sheldon		Kiana, AK 99749			
Aaron Westlake		Kiana, AK 99749			



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Renee Cook		Box 4 Kiana, AK 99749			
Janet Henry		Box 109 Kiana, AK 99749			
Kemberly Henry		Box 109 Kiana, AK 99749			
James L. Stalker		Box 160 Selawik, AK 99770			
Gertrude Williams		Box 45 Kiana, AK 99749			
Amy J Morris		Box 112 Kiana, AK 99749			
Rose Jackson		Box 57 Kiana, AK 99749			
Zonda Martin		Box 28 99749			
Oliver Reed		Box 08 99749			



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Anna Thomas		Kiana Ak	475-2101		
Vernon Atokuk			475 5099		
Darrel Johnson Jr					
Michael Westlake		Kiana Ak	475-2365		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Julie Reed					

Issues	Comments	Shell Response	Mitigation Measures*
<b>Quality of Engagement:</b> Positive/Feedback	A suggestion was made that a good time for Shell to come to Kotzebue would be the Trade Fair on the 8 <sup>th</sup> and 9 <sup>th</sup> of July which is also the Manilaaq annual meeting.	Thank you for your comment.	N/A
Positive/Feedback	Another suggestion was made for Shell to participate in the Spring Clean Up by donating bikes. Sponsors get a lot of publicity.	Thank you for your comment.	N/A

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**SIGN-IN SHEET – Kotzebue Plan of Cooperation Community Open House Meeting**  
**Kotzebue Middle/High School Multipurpose Room, Kotzebue, Alaska**  
**March 30, 2011**

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Rich B Koutchuk		PO Box 1448 Kotzebue, AK	442-4081		
Cara Braun		PO Box 1204 Kotzebue, AK	442-2614		
Christian Jider					
Frank Tyatunuk	Frank	P.O. Box 1278 Kotzebue, AK	442-3780		
WALTER Stinger		BY 49 Kotzebue	442-3301		
EARL KINGIK		3240 Penland Parkway SPOD 260 AUCH AK	575-7272		earl-kingik 2010@gakoo com
Cassie Norton		PO Box Kotzebue 5066 Alaska			
William Sheldon		PO BOX 12 99773 SHG			
Ryan West		PO Box 1204 99752	442-2614		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
L Jenni Johnson					
Kathy Koth					
Clay Greene					
Warren Stalker					
Beulah Jodok					
Leon Downey					
As M					
Minnie Kubalack					



**SHELL EXPLORATION AND PRODUCTION COMPANY**  
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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Jayde Sheldon		P.O. Box 31 Ambler AK, 99786	(907) 445-2198		
Michelle Tungiyah		Box 621 Kotzebue 99752	412-1564		
John Kubalack Jr		Box 621 Kotzebue 99752	412-1564		
Colie W. Schaeffer	KIC	Box 1050 Kotzebue AK 99752	412-1122	442-2165	cschaeffer@ KIKI719671K. com
Robert W. Thompson	KIC	P.O. Box 941	442-3243		
Chester Fallet	KIC	Box 922 OTZ	442-3786	442-7678	
John Chase	NAB		2800 X112		
Jay A. Denton	KOTZEBUE MIDDLE HIGH	PO Box 118 KOTZEBUE AK 99752	828 506 4398		
Jerry McCall		PO Box 651 Kotzebue AK 99752	907-442-2473		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
GRACE Downey		Box 496	442-2946		
Cora Downey		Box 242	442-4500		
Grant Hildreth		Box 288 012	442-4126		ghildreth@nwabor.org
Jeffrey Kowanna		Box 21	368-1234		jeffried@hotmail.com
Aggie Kowanna		Box 21	368-1234		
Jerrri Kowanna		Box 21	368-1234		



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March 30, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Vkallayseeq & Igluq Anthony Buttram	NWAB	Kotzebue	2500	3740	teleaskle@nwabor.org
Juan Zungu	NWAB	142 Kotzebue AK 99752	412 0937		None
		516 Shore ave	2314		JuanZungab2@yahoo.com

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Issues	Comments	Shell Response	Mitigation Measures*
<b>Operational Impacts:</b> Oil Spill Prevention & Response	Have you used the capping and containment system in the Arctic?	We have used this equipment in many other places but we will fully test the equipment here before it is used.	K
Oil Spill Prevention & Response	Will you test the equipment during bad weather?	Yes we will test the equipment during all conditions we could imagine but if the weather gets too bad, we will suspend operations.	I, H, and K
Oil Spill Prevention & Response	How would you deal with an oil spill in ice?	We have equipment that is designed to operate in ice.	I, H, and K
<b>Permits:</b> Timing	You said there wouldn't be any activities in 2011. Is your decision related to HB 210?	No we made our decision before that bill was introduced.	N/A

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**McQueen School Gymnasium, Kivalina, Alaska**  
**March 31, 2011**

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
DANIEL D. FOSTER	KUL	P.O. Box 50074	907/645/2224		
Mark Turner	KVL School Counselor	Box 49 Noatak	907 660 7099		
Ikey Hank	KVL	P.O. Box 50078			
MYRA ADAMS		Box 50073 KVL AK	645 - 2143		
BERT ADAMS		Box 50073 KVL AK	645 - 2143		
Walter Swan		Box 50066 KVL AK	645-2189		
Ernie Booth	KUL	P.O. Box 72 KVL AK	645-2163		
General News	KVL	P.O. 50013 KVL AK	645-5228		
Seymour Tuzgayhke III	KVL	P.O. Box 50065 KVL AK			



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**McQueen School Gymnasium, Kivalina, Alaska**  
**March 31, 2011**

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Manam Norton	KVL	PO Box 50066 Kivalina AK 99500	645-2184		
Frank Wedy	KVL	PO 37 Kivalina	645-5880		
Billy Stone JR	KVL	PO 73 Kivalina AK	645-2143		
Doreen Baldwin	Kivalina, AK 99500	P.O. BOX 50043	645-2014		
Isabelle Staker	Kivalina, AK 99750	PO BOX 50073	645-2151		
Amanda Dewey	Kivalina AK, 99750	P.O. BOX 50077	645-2055		
Jerry Norton Jr	Kivalina AK 99750	PO BOX 50046	645-5101		
Carlos Hawley	Kivalina AK 99750	BOX 5004			
Ernest Hawley	Kivalina AK	Box 4	Cell phone 645-5176		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Chris Koops	KVL	KVL AK	645-5336	—	—
Shelli Stoffer	KVL	KVL AK	645-5059		
Audrey Jones	KVL	PO BOX 57 9950 Kivalina, AK	645-2385	⊖	
Tracey Jones	KVL	Same	Same	⊖	
Tanaya Jones	KVL	Same	Same	⊖	
Tialynn Adams	KVL	PO BOX 50063	645-2162		
Louise Wesley	KVL				
Jelena Swa	KVL	Box 47	645-2190	⊖	jcsluggersw @hotmail
Carta					



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Galen Swan	Self	Box 52 Kivalina AK 99750	907 412 0538		galensw@alaska.com
Angelo Hawley	Self	Box 50033 Kivalina AK 99750	645-5454		
Amos Hawley	Self	Box 50022 Kivalina AK	645-2323		
Loretta M. Hawley	Self	Box 50022 Kivalina AK 99750	645-2323		
Gladys Adams	Self	P.O. Box 512 Kivalina AK 99750	645-2144		
Betty Swan	Self	P.O. Box 50041 Kivalina	645-2237		bswan@hotmail.com
Nikki Adams					
Millie Hawley	Native Village of Kivalina	P.O. Box 50051 Kivalina 99750	645-2153	645-2228	millie.hawley@gmail.com
Virgil Adams		P.O. Box 50074 Kivalina 99750	645-5620		



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March 31, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Austin Swan	Kivalina City	P.O. Box 50047	645-2190		austinswan@iwatek.net
Irene Carter		P.O. Box 33 Kivalina, Ak 99750	645-5454		
Andrea Baldwin	Kivalina	P.O. Box 50043	645-5336		
Russell Adams	KUL	P.O. Box 50012	645-2144		
Adrian J. Adams					
Vincent	KUL	P.O. Box 50163	645-2162		
Quinn P Hawley	KUL	P.O. Box 50026			
Joshua	KUL	McQueen School.			
Myra Wesley	KUL	Box 30 KUL	645-2235		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Stanley Hawley	KIVALINA IRA office	P.O. Box 50051 Kivalina, AK, 99750	907-645-2141	907-645-2193	tribeadmin@kivalina12.org
Luke Koonook Jr.	Kivalina	P.O. Box 80 Kivalina AK 99750	(907) 645-2511		
Josephine Hawley	Kivalina	PO box 12 Kivalina AK 99750	645-2144		
Robert Hawley	Kivalina	PO box 12 Kivalina AK 99750	645-2144		
Rhonda Norton	Kivalina, AK	PO Box 46 Kivalina AK 99750	645-2157		
Stephen R. Koenig	Kivalina, AK	PO Box 80 Kivalina, AK 99750			
Albert Norton Jr.	Kivalina AK	P.O. Box 50066 Kivalina AK 99750	645-2189		
Brenda K Norton	Kivalina AK	P.O. Box 50064 Kivalina AK 99750	645-2189		bnd-norton@yahoo.com



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Calib Wesley		Box 5048	645-215		
Lena Sage		Box 16	645-2513		
Theodore Bohr		Box 5003	645-2216		
Genny Swan		Box 10	645-2249		
Rita Ramoth		Box 17	645-2152		
Danielle Knox		Box 45	645-2154		
Franklin Knox		Box 45	645-2154		
Shirley Adams		PO Box 12	645 5084		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
am arsoo					
Margaret Baldwin	KUL	KUL, AK	645-2146		
Tillman Adams	KUL	PO Box 02 Kivalina AK			
Jerry Knap	KUL	P.O. Box 50078 Kivalina Alaska	None		
Emma Stalker	KUL	P.O. Box 50077 Kivalina AK	645-5411		
Jeremiah Kayoulik	KUL	P.O. Box 50078			
Annietta Adams	KUL	PO Box 50015 Kivalina AK	645-5161		
Alexis Hawley	KUL	P.O. Box 50084 Kivalina, AK 99780	645-2125		
Jackie	KUL	P.O. Box 50066 Kivalina AK 99750	645-2189		



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Maria Koenig		PO BOX 50066 Kivalina AK 99750	907 645 5074		



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Dolly E. Foster		Kivalina, AK 99750	645-5121	645-2169	dolly.foster@inutek.net
Kella Leonard		Kivalina 99750	<del>645-5017</del>	⊘	⊘
Brenda Hawley		Bx 36 KVLAK 99750			
Emeline Knox		Box 45 KVLAK 99750	645-2154		
Cheryl Knox		Box 45 KVLAK 99750	645-2154		
Rivella Soy		Box 349 99753	852-7607	—	—
Lawrence Adams		P.O. Box 50012	N/A		
Terry Redline		P.O. Box 43	645-5186		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Sylvester Swan III		P.O. Box 50010			
Eloria Adams		P.O. Box 73 Kivalina, AK 99750	645-2143	N/A	reba34adams@ hotmail.com
John Norton		P.O. Box 66 Kivalina, AK 99750			
JOLENE WESLEY		P.O. Box 48			
Henry Swan		P.O. Box 47	645-2190		



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Lucy M Swan		PO Box 50040 Kivalina, AK	645-2136		
Joe Loenig		P.O. Box 50019 Kivalina, AK			
Koomalook Stone		Point Hope Alaska			
Angela Haws					



SHELL EXPLORATION AND PRODUCTION COMPANY  
SIGN-IN SHEET – Kivalina Plan of Cooperation Community Open House Meeting  
McQueen School Gymnasium, Kivalina, Alaska  
March 31, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Danny Foster		P.O. Box 74 Kivalina, AK 99750			
Oran Barger		P.O. Box 07 Kivalina, AK 99750			

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Issues	Comments	Shell Response	Mitigation Measures*
Operational Impacts: Discharge	Will Shell also do the zero harmful discharge in the Chukchi where whales migrate like the Beaufort Sea?	We will not do zero volume discharge, we will be doing a zero harmful discharge of our muds and cuttings. We have looked back at the past wells from the 80's and 90's and have not found any significant change to the ocean flora, etc.	L
Quality of Engagement: Positive/Feedback	When will Shell host more meetings in Wainwright? I've been hearing back from youth there that they see the potential opportunity for careers. I would like to see Shell involved with the schools.	Shell experts would like to come out the village schools and work with youth. We would be able to do that.	N/A
Positive/Feedback	Shell is getting close to developing a partnership with NSB. I have concern about having two rigs working at the same time. There are some challenges there. I continue to see OSPR, discharge, air etc. as issues that will continue to come up in your programs.	Thank you for your comment.	K and L
Value Proposition: Workforce Development	Wants us to expand our job opportunities outside of Marine Mammal Observers and Subsistence Advisor's and Communication and Call Center Operators.	Thank you for your comment.	N/A

Notes:

\*Mitigation Measures are only assigned to applicable comments.

"Not applicable" (N/A) is used to designate comments that do not require mitigation measures as a course of action. See [Mitigation Measures Index](#) definitions according to assigned letter.

**2011 Proposed Mitigation Measures**

A-Communication Plan for avoiding conflicts with subsistence users.

B-Collaboration and Communication with Whaling Associations

C-Plan of Cooperation (will work to obtain a CAA)

D-Will honor 2010 Camden blackout dates for Nuiqsut and Kaktovik whaling.

E-Subsistence Advisors based in Chukchi and Beaufort Sea Villages and Kotzebue

F-Marine Mammal Observers

G-Robust Marine Mammal Monitoring Protocol

H-Oil Spill Response Fleet on standby 24/7 near drilling location

I-Real time Ice and Weather Forecasting

J-Crew change by helicopter and collaboration on routes to and from shore base

K-zero discharge of: drilling fluids and cuttings after the 26-in casing; gray and treated black waters; bilge and ballast waters

L-Enhanced blowout prevention and mitigation measures (i.e., second set of blind shear rams, increased frequency of BOP testing, redundant ROV hot stab panel, capping stack and containment system, and relief well plan with designated standby relief well drilling unit).



## Science Accomplishments:

Aspects of the Shell  
science program that  
reflect input and requests  
from the North Slope  
Borough



### Acoustic program in both the Chukchi and Beaufort

- Initiated in 2006 with CPAI & GXT
- Continued since that date with > \$10 million expended
- Despite setbacks, this is one of the biggest acoustic monitoring programs globally
- Generated greater understanding of many marine mammal species including walrus and bowhead movements

### Chukchi Sea aerial program

- 2006-2010 conducted aerial surveys within 25 miles of the Chukchi coast
- About \$10 million expended to date
- The first to document walrus haulouts on the Alaska Chukchi coast
- Documented downcoast (Barrow to Wainwright) movement of migrating bowheads

### Chukchi Sea Baseline studies

- 2008- 2010 added an extensive baseline program with CPAI, COMIDA, and others
- Includes – birds, mammals, plankton, benthos, contaminants, fishes, physical parameters
- Initiated following Mayor Itta's letter asking for baseline science
- > \$15 million expended to date
- Greater clarity of the ecological drivers of the Chukchi ecosystem

### Historic exploration well site evaluation

- Returned to Hammerhead (Beaufort) site in 2008
- Returned to Burger/Klondike (Chukchi) sites in 2009
- Evaluated contaminants issues and biological community structure

### Cumulative impacts analysis

- Since 2006 Shell has taken the lead in documenting all industry activities and the results of all industry monitoring efforts in the offshore
- The reports have taken a multi-year/multi-activity approach reporting total ensonification areas and reporting on multiple activities.

### Air monitoring stations

- 2008-2010 air monitoring stations at Reindeer Island and Wainwright



# EXPLORATION PLAN



## SHELL'S GOALS

To demonstrate that Shell does not cause undue or serious damage to the human, marine, or coastal environment, conforms to sound conservation practices, and is prepared to conduct exploration that is safe.



## WHY PREPARE AN EXPLORATION PLAN?

To discuss and explain the various operative activities associated with drilling.

## WHO REVIEWS THE EXPLORATION PLAN?

The North Slope Borough, potentially impacted communities, AEWC, marine mammal management groups, tribes, State of Alaska, and the federal government.

## WHAT IS INCLUDED IN THE EXPLORATION PLAN?

- Description of drilling vessels, and associated vessels and equipment
- Location and timing of operations
- Proposed type and amount of discharges
- Oil spill prevention and response measures
- Analysis of direct and indirect environmental impacts
- Mitigation measures
- Health and safety measures
- Geologic information assessment of any hazards to drilling
- Permit applications

## Exploration Plan Details

- Two EPs – Camden Bay EP in the Beaufort Sea and a Chukchi Sea EP
- Both are two year plans – starting in 2012
- Up to 2 wells per year in the Beaufort Sea
- Up to 3 wells per year in the Chukchi Sea, plus future well site work
- Noble Discoverer drillship and Conical Drilling Unit Kulluk
- Oil Spill Response capabilities on standby 24/7
- Crew change by helicopter – routes determined through coordination and communication
- Real time ice and weather forecasting
- Shorebase in Deadhorse, Barrow and Wainwright
- Robust marine mammal monitoring protocol
- Communications Plan to avoid conflicts with subsistence users
- Subsistence Advisors





# SHELL'S GOALS IN ALASKA'S BEAUFORT & CHUKCHI SEAS OUTER CONTINENTAL SHELF

## ENGAGEMENT PHILOSOPHY

Engage local residents and regulatory bodies to understand issues and concerns before design work is initiated

Utilize knowledge gained in design and operational feasibility studies, for example minimizing or mitigating the impact of a development.

Being a "good neighbor" to the residents of the North Slope, and all areas we operate within the state of Alaska.

## COMMITMENT TO NORTH SLOPE RESIDENTS

Integrate cultural and environmental protection considerations into the planning, design, construction and operational phases of our potential oil and gas activities.

Improve communication to ensure full and meaningful dialogue with residents.

Consult with NSB and NWAB staff and village residents during the planning and design stages in order to blend traditional and contemporary local knowledge with exploration technology in an appropriate manner.

## SHELL'S GOALS IN ALASKA'S NORTH SLOPE

To find and develop commercial hydrocarbon resources in the Beaufort and Chukchi OCS.

To support the community in benefiting from any potential offshore development both economically and socially.

To respect and enhance the way of life of the residents of the North Slope Borough and Northwest Arctic Borough.

## OBJECTIVES

Discuss the possible infrastructure needed to make Beaufort and Chukchi OCS development a reality, should it occur.

Review the potential social and economic benefits associated with increased infrastructure and development of Shell leases in the Beaufort and Chukchi OCS.

Discuss future engagement with the residents of the North Slope Borough and Northwest Arctic Borough.

## POSSIBLE INFRASTRUCTURE NEEDS



Sakhalin

## WHY IS OFFSHORE INFRASTRUCTURE REQUIRED?

Many leases are more than 15 miles from shore

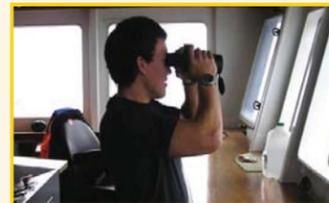
Longest land based reach to offshore sites is approximately 8 miles

## EXPERIENCE & COMMITMENT

Shell has experience in Arctic and other ice-covered offshore regions. Traditional knowledge and assistance goes a long way in helping to ensure success.

## POTENTIAL BENEFITS: JOBS & CAREERS

- Direct and indirect
- Local business contracting opportunities
- Workforce development and training



## POTENTIAL BENEFITS: REVENUE

- Tax base from pipelines & support bases to address declining revenues
- Extending the life of TAPS and the pipeline tax base
- Additional infrastructure which could make other onshore fields economic and increase revenue



## SOCIAL & CULTURAL INVESTMENTS

- Socio-economic studies
- Marine mammal studies
- Environmental studies
- Additional social and cultural investments

## BEAUFORT SEA INFRASTRUCTURE: INITIAL DEVELOPMENT FOCUS



**Camden Bay:** Initial focus is the 1985 discovery of Hammerhead/Sivulliq.

- 14 to 18 miles offshore
- Water depth 100 feet

Development of Sivulliq is dependent upon factors including:

- Seismic results
- Appraisal drilling results

## CHUKCHI SEA INFRASTRUCTURE: INITIAL EXPLORATION FOCUS



The first public sale of leases in the Chukchi Sea since 1991 took place on February 6, 2008.

The Chukchi Sea Shelf is believed to hold up to 30 billion barrels (4.8x10<sup>9</sup> m<sup>3</sup>) of oil and gas reserves.

- Lease blocks are more than 50 miles offshore
- Water depth 130-200 feet

## ADDRESSING CHALLENGES THROUGH RESEARCH & DEVELOPMENT

Platform & vessel noise reduction to minimize impact to marine mammals

Production platform structure design to withstand ice loading

Oil spill prevention and response for development infrastructure

Vessel and platform re-supply

Offshore pipeline installation beyond landfast ice

Evacuation and rescue



## FUTURE ENGAGEMENT: THE WAY FORWARD

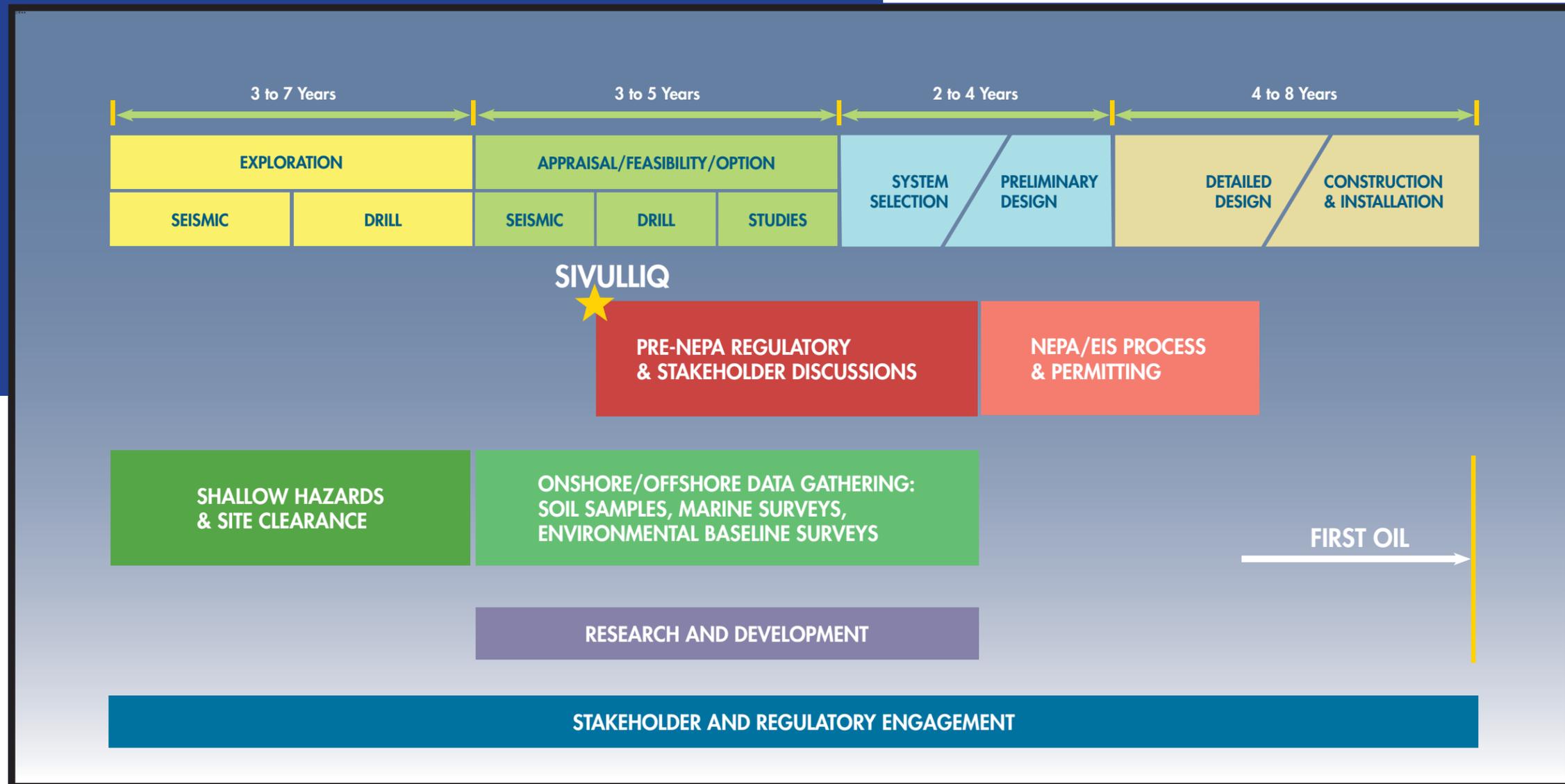
To succeed in meeting mutual goals, we must move forward together based on mutual respect and open dialogue:

- Discuss ideas on ways to engage, consult and work together;
- Validate our understanding of your concerns;
- Discuss issues, potential impacts and potential solutions & mitigation measures;
- Share ideas and feedback on economic development.

**"It is clear, that substantial involvement of all potentially affected parties including Alaska Natives is a prerequisite for a successful approach to the development of Arctic OCS Oil and Gas."**

—Environmental Information for Outer Continental Shelf Oil and Gas Decisions In Alaska by the National Research Council

# Typical Offshore Development Timeline





# **Shell Camden Bay and Chukchi Sea Program Update**

**March 2011**



# Shell In Alaska

- 2011 Program
- 2012-2013 Proposed Exploration Plans



# **2011 Program**

# 2011 Shell Proposed Operations

## ■ Shell 2011 program:

- Marine mammal monitoring to support operations
- Non Shell operated Ecological science data gathering (offshore and onshore)
- Com Centers and Subsistence
- Advisors in Coastal Villages of North Slope:
  - Point Lay, Point Hope, Wainwright, Barrow, Deadhorse, Kaktovik, Nuiqsut





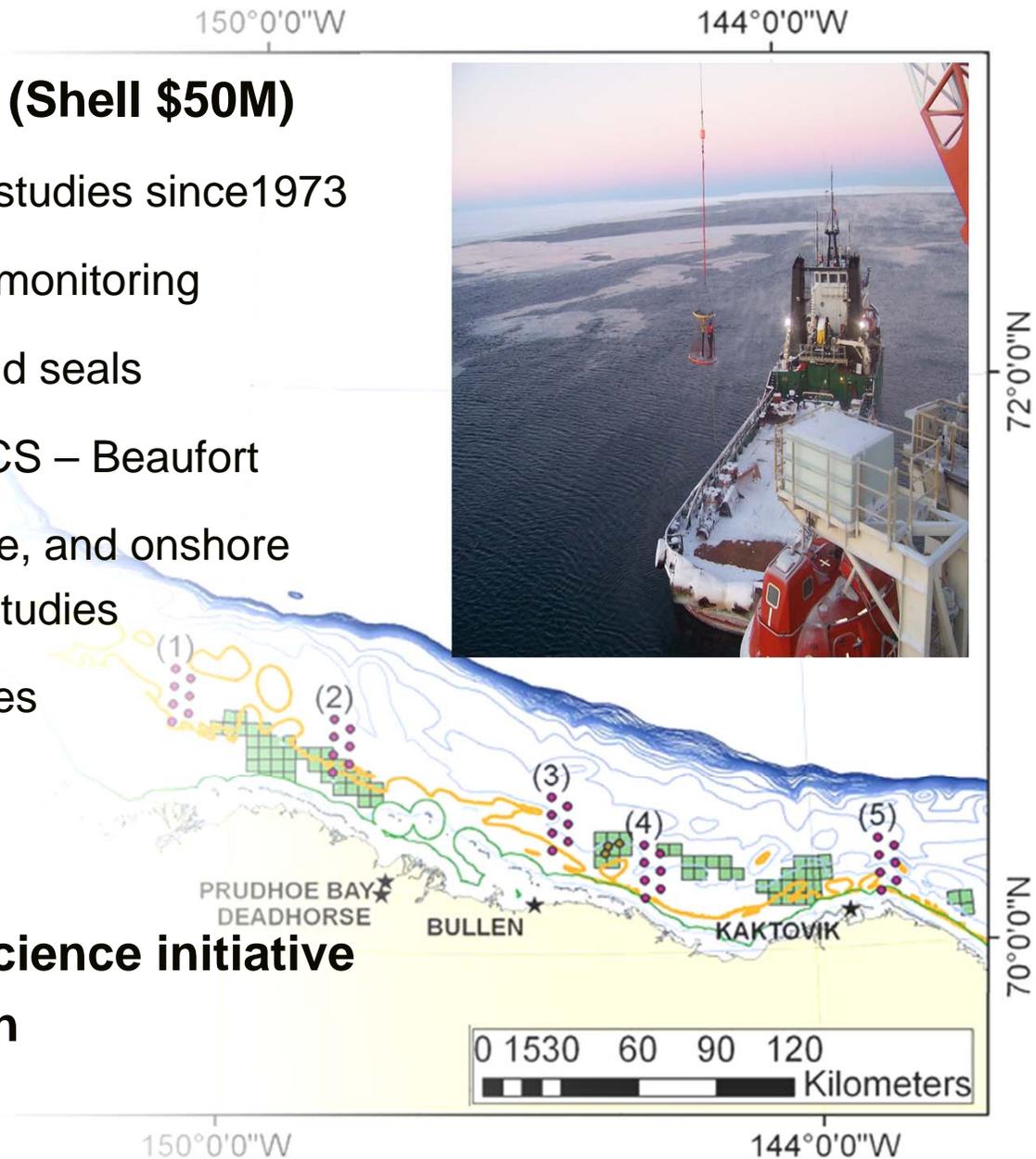
# Science

# Baseline Science Supports Exploration In Alaska

## ■ \$500 Million and growing (Shell \$50M)

- 5000 independent scientific studies since 1973
- 6 years of marine mammal monitoring
- Tagging studies – walrus and seals
- First air quality station in OCS – Beaufort
- Ongoing offshore, nearshore, and onshore ecological characterization studies
- Traditional knowledge studies
- Health impact assessments

## ■ Up to \$5 million annual science initiative with North Slope Borough



## Offshore, nearshore, onshore studies

- Marine Mammal
- Acoustic Recorders
- Ice & Metocean Buoys
- UAV Monitoring
- Stereo Photography
- Upward Looking Sonar
- Benthic Studies
- Sediment chemistry
- Current Meter
- Hydrology & Habitat Assessment
- Coastal Stability Studies
- Traditional Knowledge
- Bird Observations
- Fisheries Sampling
- Zooplankton
- Physical Oceanography

# NSB Collaborative Science Agreement

- Objective: To enable community members in coastal villages of the Chukchi and Beaufort Seas to participate and prioritize science being conducted related to the potential effects and impacts of oil and gas exploration and development in the outer continental shelf (OCS).
- Signed Sept. 24, 2010
- Funded annually by Shell for an initial term of five years, and administered by the NSB Mayor's Office
- 14-Member Steering Committee
  - Coastal Villages
  - NSB Wildlife Department and Mayor's Office
  - Independent Scientists
  - Shell





# **2012-13 Proposed Exploration Plans**

# Chukchi and Beaufort Seas



## 2012-13 Proposed Operations

- Drill up to three wells per year in Chukchi Seas during open water drilling season (July-October)
- Drill up to two wells per year in Beaufort Sea during open water drilling season (July-October)



- Continuation of Shell's long-term ecological characterization offshore and onshore



# Mitigation

## Mitigation Shell has committed to

- Communication Plan for avoiding conflicts with subsistence users
- Collaboration and Communication with Whaling Associations, Walrus, Nanuq and Seal Commissions
- Capping and Containment system
- Commitment to hire Subsistence Advisors
- Marine Mammal Observers on all vessels
- Robust Marine Mammal Monitoring Protocol
- Real time Ice and Weather Forecasting
- Crew change by helicopter and collaboration on routes to and from operations
- Deadhorse, Wainwright and Barrow shore bases
- No transiting, including within polynya zone, without communicating
- Relief rig capabilities



# Prevention and Response

## Commitments

- **Prevention Is the First Priority and Can Be Accomplished**
- **BOP – testing and enhancements**
  - Testing every 7 days instead of every 14 days
  - Use of second set of shear rams
  - Sub-sea remote operating panel relocation
  - ROV/Diver options on and near site
- **Arctic Cap and Containment System**
- **Full OSR capabilities for each sea**
- **Second rig relief well capability**

# Alaska Arctic Cap and Containment System





# **New and Traditional Oil Spill Contingency Planning**

## Shell Oil Spill Response Goals

- Immediate Onsite Response
- Latest Technology
- Flexible Environmental Response Capability
- Sustained Response

# Arctic Response Options

## Offshore:

Mechanical

In-situ Burning

Dispersants

(under select conditions)



## Nearshore:

Mechanical

In-situ Burning



## Onshore:

Mechanical

In-situ Burning



# Nanuq

- Multi-Purpose Vessel
  - Spill Response;
  - Onsite Command Center;
  - Anchor Handling;
  - Ice Management; and
  - Supply
- Ice Class A1 Vessel
- Dynamic Positioning Capability
- Full support for up to 41 crew and responders
- 2 Lamor LSC-5 Brush Skimmers & Power Packs
- Staging and Deployment of Boom-tending Work Boats
- Onboard storage: >12,000 bbl
- Rapid Transit for lightering recovered oil
- High Volume, Viscous Oil Lightering capability

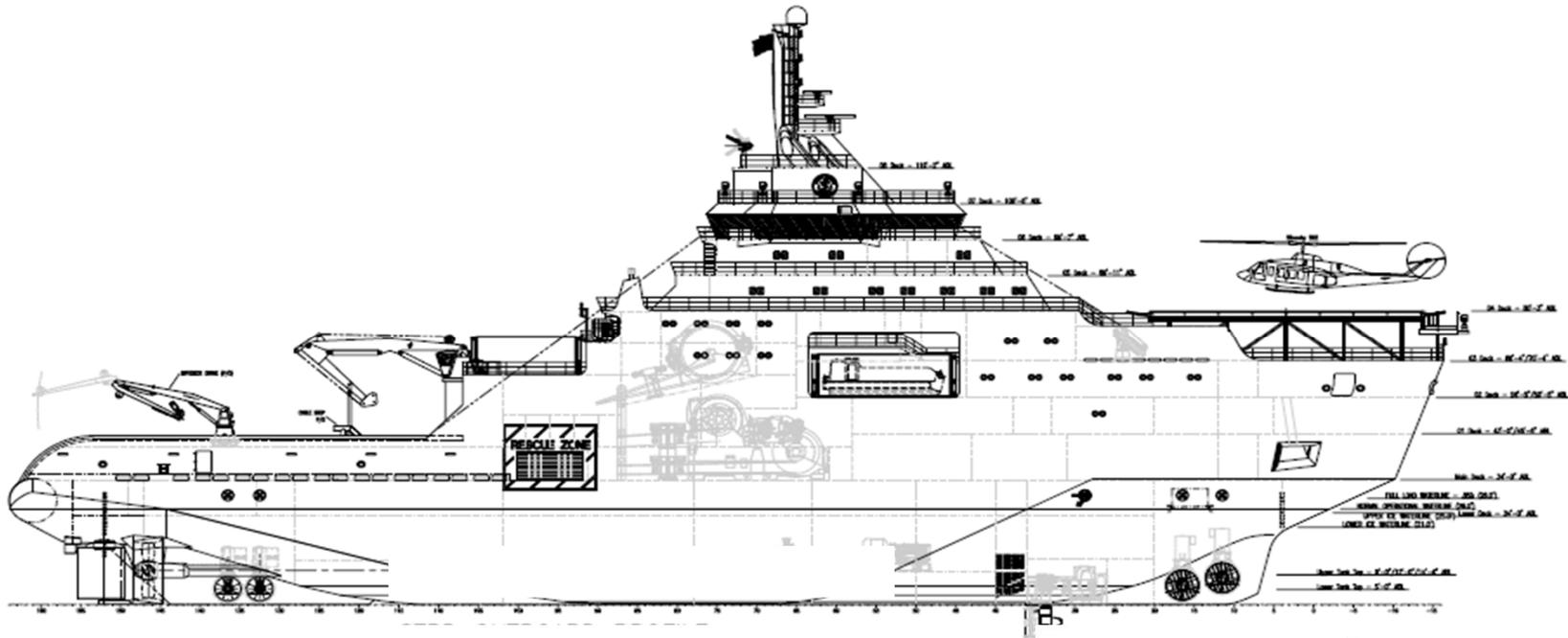


# Arctic Endeavor

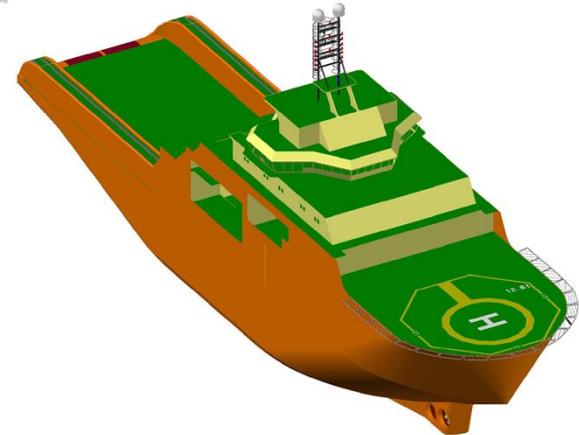
- Dedicated Oil Spill Response Barge with Tug Assist
- Ice Strengthened
- Onboard Field Command and Communications Center
- 2 Lamor LSC-5 Brush Skimmers & Power Packs
- Staging and Deployment of Boom-tending Work Boats and 249-bbl barges
- Staging and Deployment of 47' Skimmer with built-in Brush Skimmers
- Onboard storage: >18,000 bbl
- High Volume, Viscous Oil Lightering capability



# Hull 247



- Length Overall – 360' (110m)
- Beam – 80' (24.4m)
- Draft – 26' (normal)
- Anchor Handling Backup
- Polar Ice Classed
- High POB for contingency response
- Storage Capacity: 8,000 bbl



# Mechanical Recovery



Lamor Brush



TransRec 150



Ocean Buster



47' Kvichak w/ brush skimmer



Small Over-the-Side Skimmers



Rope Mop skimmer



# **Harsh Weather Operations**

## Brent 'B' production platform photographed in stormy weather.

The photograph shows the ferocity of the wind and waves during a storm in the North Sea. Winds of more than 100 mph produced waves reaching up to the underside of the deck which is 75 ft above sea level. Platform on calm day shown at bottom.



## Ice Against Platform Legs - video



**Thank You**



**END OF PRESENTATION**



**Attachment C**  
**Communication Plan**

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**COMMUNICATION PLAN  
EXPLORATION DRILLING PROGRAM  
CAMDEN BAY, ALASKA**

The following Communication Plan will be used during each exploration drilling season to coordinate activities with local subsistence users, including the Alaska Eskimo Whaling Commission (AEWC), Alaska Eskimo Walrus Commission (AWC), Alaska Nanuuq Commission (ANC), Alaska Beluga Whale Committee (ABWC), Ice Seal Committee (ISC), and village Whaling Captains Associations (WCAs). During each drilling season the drilling vessel *Kulluk* or *Discoverer*, either under tow (*Kulluk*), or by its own propulsion (*Discoverer*) and associated support vessels will transit through the Bering Strait into the Chukchi Sea on or after July 1, arriving on location near Camden Bay approximately July 10. Exploration drilling activities at the drill sites are planned to begin on or about July 10 and end on or before October 31, with a suspension of all operations beginning August 25 for the Nuiqsut (Cross Island) and Kaktovik subsistence bowhead whale hunts. During the suspension for the whale hunts the drilling vessel and support fleet will leave the Camden Bay project area and move to an area north of latitude 71° 25'N and west of longitude 146° 4'W. Shell will return to resume activities after the subsistence whale hunts conclude.

The Communications Plan will be implemented in two phases. Phase I describes the guidelines already in place to ensure proper communication during the drilling season. Phase II describes what to do in the event Shell Offshore Inc. (Shell) activities potentially affect subsistence activities and how to keep subsistence user groups informed of Shell activities. Phase I and II are designed to minimize the potential for interference of Shell activities with subsistence activities and resources and to keep operators up-to-date regarding the timing and status of the bowhead whale migration in Camden Bay as well as the timing and status of other subsistence hunts.

Drilling program operations will be performed in compliance with all applicable permits and authorizations, including the Plan of Cooperation, Letter of Authorization per U.S. Fish & Wildlife Service, Incidental Harassment Authorization per National Marine Fisheries Service and Lease Stipulation 5 from lease sales 195 and 202 per Bureau of Ocean Energy Management, Regulation and Enforcement.

**PHASE I**

- Shell will fund the operation of Communication and Call Centers (Com Centers) in the coastal villages to enable communications between Shell operations and vessels, local subsistence users, and Subsistence Advisors (SA), thereby notifying the subsistence community of any vessel transit route changes and avoiding conflicts with subsistence activities.

- Marine Mammal Observers (MMOs) will be onboard exploration drilling-related vessels with responsibilities to: monitor for the presence of marine mammals, assist with the maintenance of marine mammal safety radii around vessels, monitor and record avoidance or exposure behaviors, and communicate with the Com Centers and local subsistence hunters by marine radio.
- If a conflict arises with offshore activities, the MMO will immediately contact the vessel captain and the Com Centers. The Com Centers will then contact Shell's simultaneous operations emergency response team. If avoidance is not possible, the next phase will include communication between a Shell representative and a representative from the impacted subsistence hunter group(s) to resolve the issue and plan an alternative course of action by either industry or the subsistence groups.
- Shell will employ local SAs from the Camden Bay villages to provide consultation and guidance regarding the affected species migration, the subsistence hunt, and other subsistence activities. The SAs will work approximately 8 hours per day and 40-hour weeks each drilling season. Responsibilities of the SAs will include: reporting any subsistence concerns or conflicts, within 4 hours if the conflict appears imminent, to the Com Centers (who will then contact Shell's simultaneous operations emergency response team); coordinating with subsistence users to advise on location and timing of Shell's activities; reporting subsistence-related comments, concerns, and information to Shell staff; and, advising Shell how to avoid subsistence conflicts and subsistence users. A SA handbook will be developed and provided to each SA. The handbook will outline contact numbers, communication procedures, and communication timelines for reporting and communicating potential conflict situations.
- Helicopter traffic flight restrictions will be in place to prohibit aircraft from flying below 1,500 ft (457 m) altitude, (except during takeoffs and landings, in emergency situations or for MMO overflights), while over land or sea. If flights need to deviate from this path due to emergency landings or other unavoidable reasons, the new flight information will be immediately shared, as outlined by Shell Health, Safety, Security, and Environment requirements, with Com Centers so area subsistence users can be notified.
- Regular overflight surveys and support vessel surveys for marine mammals will be conducted to further monitor prospect areas and identify areas currently being used for subsistence activities to avoid potential conflicts with users.
- To minimize impacts on marine mammals and subsistence hunting activities, the drilling vessel and support vessels traversing north through the Bering Strait will transit through the Chukchi Sea along a route that lies offshore of the polynya zone. In the event the transit outside of the polynya zone results in Shell having to break ice, as opposed to managing ice by pushing it out of the way), the drilling vessel and support vessels will move into the polynya zone far enough so that ice breaking is not necessary. If it is necessary for any vessel to move into the polynya zone, Shell will notify the local communities of the change in the transit route through the Com Centers.

## **PHASE II**

All guidelines in Phase I will be adhered to in addition to the following:

- If potential conflicts are identified between Shell activities and subsistence activities; the Com Center Action Plan will be used to manage the issue.
- Shell will continue with engagements and regular communications with the AEW, AWC, ANC, ABWC, ISC, and the WCAs of Barrow, Wainwright, Point Lay, Point Hope, Kaktovik and Nuiqsut once transiting of vessels begins through Chukchi Sea on the way to Camden Bay, during drilling activities, and during mobilization from Camden Bay and through the Chukchi Sea.

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