

Appendix H

Plan of Cooperation

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**Plan of Cooperation Addendum
Revised Chukchi Sea Exploration Plan
OCS Lease Sale 193
Chukchi Sea, Alaska**

**May 2011
Revised August 2011**

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Table of Contents

	<u>Page</u>
ACRONYMS & ABBREVIATIONS	iii
1.0 INTRODUCTION.....	1
2.0 POC LEASE STIPULATION AND REGULATORY REQUIREMENTS	2
3.0 MEASURES IN PLACE.....	4
3.1 Revised Chukchi Sea EP Mitigation Measures.....	4
3.1.1 Subsistence Mitigation Measures.....	4
3.1.2 Marine Mammal Mitigation Measures.....	6
3.1.3 Mitigation Measures for Operations and Oil Spill Prevention and Response.....	7
3.2 Exploration Drilling Marine Mammal Monitoring and Mitigation Program.....	9
3.3 Interaction and Avoidance Plan for Polar Bear and Pacific Walrus	9
4.0 AFFECTED SUBSISTENCE COMMUNITY MEETINGS	10
4.1 Consultation with Community Leaders.....	11
4.2 Community Meeting Summaries	11
4.3 Project Information and Presentation Materials.....	14
4.4 Meeting Process	14
5.0 CONCLUSION.....	14

List of Tables

Table 4.2-1 Meeting Dates and Locations	11
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List of Figures

Figure 1 Location Map Exploration Drilling Program	3
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List of Attachments

Attachment A Outer Continental Shelf (OCS) Lease Sale 193 Stipulations	
Attachment B Communication and Consultation with North Slope Subsistence Stakeholders	
Attachment C Chukchi Sea Communication Plan	

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ACRONYMS & ABBREVIATIONS

4MP	Marine Mammal Monitoring and Mitigation Plan
ABWC	Alaska Beluga Whale Committee
AEWC	Alaska Eskimo Whaling Commission
ASRC	Arctic Slope Regional Corporation
bbbl	barrel(s)
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>
dB	decibel(s)
EA	Environmental Assessment
EIA	Environment Impact Assessment
EP	Exploration Plan
EWC	Eskimo Walrus Commission
ft	foot/feet
ICAS	Inupiat Community of the Arctic Slope
IHA	Incidental Harassment Authorization
IMP	Ice Management Plan
km	kilometer(s)
LCMF	LCMF Incorporated, a division of Ukpeagvik Inupiat Corporation
LOA	Letter of Authorization
m	meter(s)
MAWP	Maximum anticipated wellhead pressure
mi	mile(s)
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

NSBSD	North Slope Borough School District
NWAB	Northwest Arctic Borough
OCS	Outer Continental Shelf
ODPCP	Oil Discharge Prevention and Contingency Plan
OSR	oil spill response
POC	Plan of Cooperation
revised Chukchi Sea EP	Revised Chukchi Sea Exploration Plan, OCS Lease Sale 193, Chukchi Alaska
ROV	remotely operated vehicle
SA	subsistence advisor
Shell	Shell Gulf of Mexico Inc.
UIC	Ukpeagvik Iñupiat Corporation
USFWS	United States Fish and Wildlife Service
WCD	worst case discharge

1.0 INTRODUCTION

Shell Gulf of Mexico Inc. (Shell) seeks to revise its Chukchi Sea Exploration Plan (EP). The initial Chukchi Sea 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 seven blocks (Posey Area Blocks 6713, 6714, 6763, 6764, 6912 and Karo Area Blocks 6864 and 7007) of interest in three prospects (Burger, Southwest Shoebill, and Crackerjack), that contained five potential drill sites (Burger C, F, J, Southwest Shoebill C, and Crackerjack C). The initial Chukchi Sea EP consisted of an exploration drilling program, which would have been conducted during the 2010 exploration drilling season, and included the drilling of an exploration well at up to three of the above-referenced five potential drill sites during the 2010 exploration drilling season using the drillship *Frontier Discoverer* now known as the Motor Vessel (M/V) *Noble Discoverer* (*Discoverer*).

The initial Chukchi Sea EP was deemed submitted by BOEMRE on 20 October 2009. BOEMRE subsequently prepared and distributed an Environmental Assessment (EA) of the proposed exploration drilling program as detailed in the EP, issued a Finding of No Significant Impact National Environmental Policy Act, and approved the Chukchi Sea EP on 7 December 2009. Shell was not able to conduct the exploration drilling program in 2010 or 2011 since the exploration drilling 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 an initial Chukchi Sea EP, Shell plans to conduct an exploration drilling program beginning in the summer of 2012 at some of the same drill sites within some of the same prospects using the same drillship. Shell has prepared a Revised Chukchi Sea Exploration Plan, OCS Lease Sale 193, Chukchi Alaska (revised Chukchi Sea EP) accordingly 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 Chukchi Sea EP. The following POC Addendum updates the POC with information regarding proposed changes in the proposed exploration drilling program, and documentation of meetings undertaken to inform the stakeholders of the revised exploration drilling program. The POC Addendum builds upon the previous POC.

The POC Addendum identifies the measures that Shell has developed in consultation with North Slope communities and subsistence user groups and will implement during its planned Chukchi Sea 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 revised Chukchi Sea EP exploration drilling program beginning in the summer of 2012, 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)). Shell has documented its contacts with the 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 Addendum may be further 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 Chukchi Sea exploration drilling program, which is planned for the Burger Prospect in the Chukchi Sea (Figure 1), is set-out in detail in the revised Chukchi Sea EP 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 (EIA), Revised Chukchi Sea Exploration Plan, OCS Lease Sale 193, Chukchi Sea Alaska. Shell will implement this POC, and the mitigation measures set-forth herein, for its Chukchi Sea exploration drilling program.

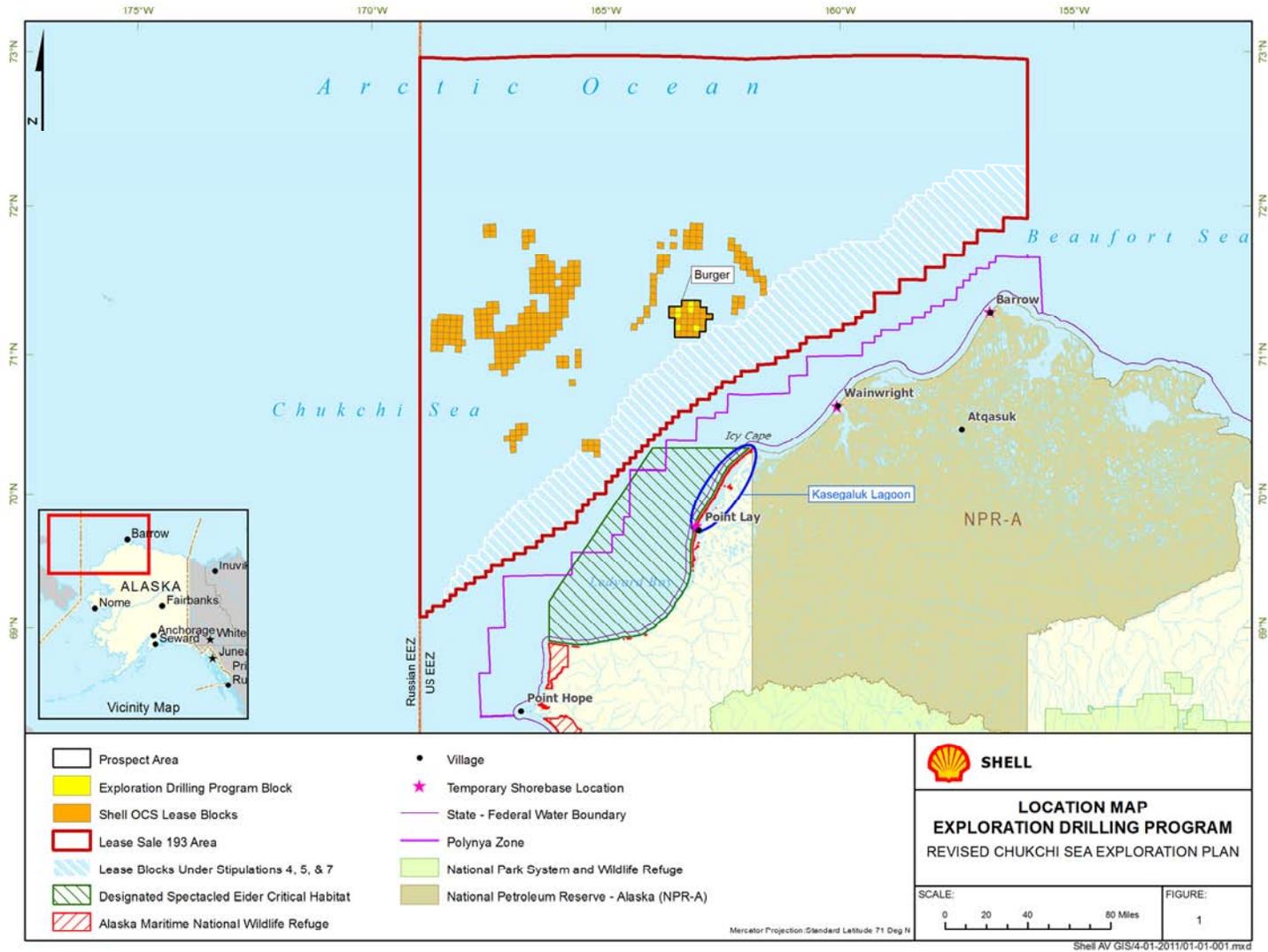
2.0 POC LEASE STIPULATION AND REGULATORY REQUIREMENTS

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 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), the Alaska Eskimo Whaling Commission (AEWC), and co-management groups including the Alaska Beluga Whale Committee (ABWC), Alaska Eskimo Walrus Commission (EWC), Ice Seal Commission, and Nanuuq Commission.

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 Location Map Exploration Drilling Program



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 the Chukchi Sea to monitor and mitigate potential impacts to subsistence users and resources. These measures are documented in the following sections:

- Revised Chukchi Sea EP Mitigation Measures
- Exploration Drilling Marine Mammal Monitoring and Mitigation Program (4MP)
- Interaction and Avoidance Plan for Polar Bear and Pacific Walrus

3.1 *Revised Chukchi Sea EP Mitigation Measures*

The mitigation measures Shell has adopted and will implement during its revised Chukchi Sea 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

To minimize any cultural or resources impacts to subsistence beluga whaling or walrus hunting activities from its operations, exploration drilling activities will not take place in the Chukchi Sea until on or about July 4, in each drilling season. Shell will implement the following measures to ensure coordination of its activities with local subsistence users and 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 drillship 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 drillship 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 in the open sea toward the Chukchi Sea drill sites.
- Vessels underway will alter course to avoid impacts to marine mammals including possible collisions, stampeding, and exclusion from access to critical resources.
- There will be no transit before July 1 in the Bering Strait to minimize effects on spring and early summer bowhead whale hunting.
- Shell has developed a Communication Plan (see Attachment C) and will implement it 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 exploration 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 through each exploration drilling season. 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 SAs responsibilities. The handbook will also 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.
- 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.

Exploration Drilling Operations:

- Drilling muds will be recycled (used from one well to the next) to the extent practicable based on operational considerations (e.g., whether mud properties have deteriorated to the point where they cannot be used further), to reduce discharges from the operations. At the end of the season, excess water based fluids, approximately 1,500 barrels (bbl), will be pre-diluted to a 30:1 ratio with seawater and then discharged.

- Drilling muds 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.
- Lighting on the drillship 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 drillship to reduce the possibility of a bird collision (Bird Strike Avoidance and Lighting Plan in Appendix I of the revised Chukchi Sea EP).

3.1.2 Marine Mammal Mitigation Measures

Marine mammal mitigation measures will focus on the utilization of MMOs to ensure that exploration 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 exploration 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, in emergency situations, or for MMO overflights), further reducing the likelihood of impacts.

Anchored vessels will remain at anchor and continue ongoing operations if approached by a marine mammal. An approaching animal, not exhibiting avoidance behavior, is likely curious and not regarded as harassed. 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 for Exploration Drilling of Selected Lease Areas in the Alaskan Chukchi Sea (revised Chukchi Sea EP, Appendix D).

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:

- 4MP protocol;
- Aircraft will not operate within 1,500 ft (457 m) of whale groups;
- Aircraft and vessels will not operate within 0.5 miles (mi) (.8 kilometers [km]) of walrus 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 to its destination;
- 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 *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.

Exploration Drilling Operations:

- During zero-offset vertical seismic profiles (Section 2.4 of EIA, Appendix F, revised Chukchi Sea EP), airgun arrays 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 odontocete.

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:

- All vessels transit routes 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 (IMP, revised Chukchi Sea EP, Appendix K).
- Ice management will involve preferentially redirecting, rather than breaking, ice floes while the floes are well away from the drill site (IMP, revised Chukchi Sea EP, Appendix K).
- Real time ice and weather forecasting will be from the Shell SIWAC.
- 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 Chukchi Sea 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.
- Shell will deploy an oil spill response (OSR) fleet that is capable of collecting oil on the water up to the worst case discharge (WCD) planning scenario which is greater than the calculated WCD 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.
- 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..
- The blowout prevention program will be enhanced through the use of two sets of blind/shear rams, increased frequency of blowout preventer (BOP) performance tests from 14 to 7 days, a remotely operated vehicle (ROV) control panel on the seafloor with sufficient pressured water-based fluid to operate the BOP, a containment system that includes both capping equipment and treatment and flaring capabilities, a fully-designed relief well drilling plan and provisions for a second drilling vessel, the conical drilling unit *Kulluk* to be available to drill the 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 as equipment 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 (MAWP) 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”)
- A polar bear culvert trap has been constructed in anticipation of OSR needs and will be available prior to commencing the exploration drilling operations.
- Pre-booming is required for all fuel transfers between vessels (the Fuel Transfer Plan is located in Appendix M of the revised Chukchi Sea 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 exploration drilling program as detailed in the revised Chukchi Sea EP. 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 is available from NMFS and is included in Appendix D of the revised Chukchi Sea EP. The 4MP for the exploration drilling program includes the following provisions:

- MMOs will be required to support the transit and operations in the Chukchi 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 Chukchi Sea 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 seismic and exploration drilling activities.
- Sound Source Verification – field measurement sound propagation profiles for the drillship and support vessels utilized by Shell in the planned exploration drilling program in the Chukchi Sea.

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 EP has been sent to the USFWS. Measures in the plan, which cover all Shell activities associated with the revised Chukchi Sea EP are summarized below.

- 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 (.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 (.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 Specialists, 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 73 Federal Register 33212.
- Exploration drilling and support vessels will observe a 0.5 mi (.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 revised Chukchi Sea EP include: Barrow, Wainwright, Point Lay and Point Hope. Kotzebue, Kivalina, and Kiana were also visited by Shell to communicate planned offshore activities beginning in the summer of 2012. Additionally, Shell met with subsistence groups including the AEWG, the Nanuuq 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 and NWAB, 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 Chukchi Sea EP. Comment analysis tables for numerous meetings held during 2011 summarize feedback from the communities on Shell 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, ASRC Board Member and President of the NSB Assembly Anthony Edvardsen – Whaling Captain and President of 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 Oommittuk - Mayor of Point Hope
21 January	Barrow	Charlie Hopson – Whaling Captain, LCMF employee, and AEWG alternate commissioner in Barrow Adeline Hopson – NSB Assembly Member Deano Oleuman – NSB Assembly Member
21 January	Barrow	Ray Koonuk – AEWG Commissioner and Point Hope Whaling Captain
21 January	Barrow	George Edwardson – ICAS President Juanita Smith – ICAS Natural Resource Director
21 January	Point Hope	Rex Rock Sr. – NSB Assembly Member and Tikigaaq Corporation President
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
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
4-5 March	Anchorage	AEWG 2009 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

Table 4.2-1 Meeting Dates and Locations

2 April	Barrow	ICAS Monthly Meeting
20 April	Barrow	Native Village of Barrow Meeting
22 April	Point Lay	Plan of Cooperation Public Meeting
23 April	Kivalina	Community Meeting
2010	Meeting Location	Meeting Attendees – Position
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	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
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
30 July	Kotzebue	NWAB Assembly Meeting
3 August	Barrow	NSB Assembly Meeting
7 September	Barrow	NSB Assembly Meeting
24 September	Barrow	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
2011	Meeting Location	Meeting Attendees – Position
27 January	Barrow	Barrow Whaling Captains Association Meeting
27 February – 2 March	Dutch Harbor	Edith Vorderstrasse – UIC UMIAQ General 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 Alzred Oomittuk – City of Point Hope Council Member <ul style="list-style-type: none"> ▪ Bessie Kowunna – Shell Point Hope Community Liaison, Tikigaq Board Member, and City Council Member ▪ Theodore Frankson – Native Village of Point Hope Staff ▪ Aaron Oktollik – AEWC Commissioner for Point Hope and Whaling Captain ▪ Carl Brower – Whaling Captain

Table 4.2-1 Meeting Dates and Locations

		<ul style="list-style-type: none"> ▪ 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 <p>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</p>
28 February – 3 March	Dutch Harbor	<p>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 – NSBSD School Board Member, Ilisagvik 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</p>
7-8 March	Anchorage	Arctic Open Water Meeting
21 March	Barrow	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
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 Nanuuq 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

Notes:

ASRC = Arctic Slope Regional Corporation
CAA = Conflict Avoidance Agreement
ICAS = Inupiat Community of the Arctic Slope

LCMF = LCMF Incorporated, A subsidiary of Ukpeagvik Inupiat Corporation
NSBSD = North Slope Borough School District
UIC = Ukpeagvik Inupiat Corporation

4.3 Project Information and Presentation Materials

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

Revised Chukchi Sea EP Exploration Drilling Presentation Summary

- Summary of Shell's Science Accomplishments
- Summary and explanation of Shell's Proposed 2012-13 EP
- Summary of Shell's proposed drill sites for the revised Chukchi Sea 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 conflicts and to notify the communities of any changes in its planned operations. The 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).

Attachment A
OCS Lease Sale 193 Stipulations

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Leasing Activities Information



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

Final Lease Stipulations Oil and Gas Lease Sale 193 Chukchi Sea February 6, 2008

- Stipulation 1. Protection of Biological Resources
- Stipulation 2. Orientation Program
- Stipulation 3. Transportation of Hydrocarbons
- Stipulation 4. Industry Site-Specific Monitoring Program for Marine Mammal Subsistence Resources
- Stipulation 5. Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Marine Mammal Subsistence-Harvesting Activities
- Stipulation 6. Pre-Booming Requirements for Fuel Transfers
- Stipulation 7. Measures to Minimize Effects to Spectacled and Steller's Eiders During Exploration Activities

Stipulation No. 1. Protection of Biological Resources. If previously unidentified 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 finding 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 plan (EP) or development and production plan (DPP) submitted under 30 CFR 250.211 and 250.241 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 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 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 Monitoring Program for Marine Mammal Subsistence Resources. A lessee proposing to conduct exploration operations, including ancillary seismic surveys, on a lease within the blocks identified below during periods of subsistence use related to bowhead whales, beluga whales, ice seals, walruses, and polar bears 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 appropriate agencies and co-management organizations, determines that a monitoring program is not necessary. Organizations currently recognized by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) for the co-management of the marine mammals resources are the Alaska Eskimo Whaling Commission, the Alaska Beluga Whale Committee, the Alaska Eskimo Walrus Commission, the Ice Seal Commission, and the Nanuk Commission. The RS/FO will provide the appropriate agencies and co-management organizations a minimum of 30 calendar days, but no longer than 60 calendar days, to review and comment on a proposed monitoring program prior to Minerals Management Service (MMS) 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 and beluga whales, ice seals, walruses, and polar bears are present in the vicinity of lease operations and the extent of behavioral effects on these marine mammals due to these operations. In designing the program, the lessee must consider the potential scope and extent of effects that the type of operation could have on these marine mammals. 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 the marine mammals of concern and the extent of behavioral effects due to operations;
- (2) Coordinating the monitoring logistics beforehand with the MMS Bowhead Whale Aerial Survey Project and other mandated aerial monitoring programs;
- (3) Inviting a local representative, to be determined by consensus of the appropriate co-management organizations, to participate as an observer in the monitoring program;
- (4) Submitting daily monitoring results to the RS/FO;
- (5) Submitting a draft report on the results of the monitoring program to the RS/FO within 90 days following the completion of the operation. The RS/FO will distribute this draft report to the appropriate agencies and co-management organizations;
- (6) Allowing 30 days for independent peer review of the draft monitoring report; and
- (7) Submitting a final report on the results of the monitoring program to the RS/FO within 30 days after the completion of the independent peer review. The final report will include a discussion of the results of the peer review of the draft report. The RS/FO will distribute this report to the appropriate agencies and co-management organizations.

The RS/FO may extend the report review and submittal timelines if the RS/FO determines such an extension is warranted to accommodate extenuating circumstances.

The lessee 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 for bowhead whales. The lessee may be required to fund an independent peer review of a proposed monitoring plan and the draft report on the results of the monitoring program for other co-managed marine mammal resources. 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 appropriate agencies and co-management resource organizations. The results of these peer reviews will be provided to the RS/FO for consideration in final MMS approval of the monitoring program and the final report, with copies to the appropriate agencies and co-management organizations.

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

The MMS, NMFS, and FWS will establish procedures to coordinate results from site-specific surveys required by this stipulation and the LOA's or IHA's to determine if further modification to lease operations are necessary.

This stipulation applies to the following blocks:

NR02-06, Chukchi Sea:

6624, 6625, 6674, 6675, 6723-6725, 6773-6775, 6822, 6823, 6872

NR03-02, Posey:

6872, 6873, 6918-6923, 6967-6973, 7016-7023, 7063-7073, 7112-7123

NR03-03, Colbert

6674, 6723, 6724, 6771-6774, 6820-6824, 6869-6874, 6918-6924, 6966-6974, 7015-7024, 7064-7074, 7113-7124

NR03-04, Solivik Island

6011-6023, 6060-6073, 6109-6122, 6157-6171, 6206-6219, 6255-6268, 6305-6317, 6354-6365, 6403-6414, 6453-6462, 6502-6511, 6552-6560, 6601-6609, 6651-6658, 6701-6707, 6751-6756, 6801-6805, 6851-6854, 6901-6903, 6951, 6952, 7001

NR03-05, Point Lay West

6014-6024, 6062-6073, 6111-6122, 6160-6171, 6209-6221, 6258-6269, 6307-6317, 6356-6365, 6406-6414, 6455-6462, 6503-6510, 6552-6558, 6602-6606, 6652-6655, 6702, 6703

NR04-01, Hanna Shoal

6223, 6267-6273, 6315-6323, 6363-6373, 6411-6423, 6459-6473, 6507-6523, 6556-6573, 6605-6623, 6654-6671, 6703-6721, 6752-6771, 6801-6819, 6851-6868, 6901-6916, 6951-6964, 7001-7010, 7051-7059, 7101-7107

NR04-02, Barrow

6003-6022, 6052-6068, 6102-6118, 6151-6164, 6201-6214, 6251-6262, 6301-6312, 6351-6359, 6401-6409, 6451-6456, 6501-6506, 6551, 6552, 6601, 6602

NR04-03, Wainwright

6002-6006, 6052, 6053

NS04-08, (Unnamed)

6816-6822, 6861-6872, 6910-6922, 6958-6972, 7007-7022, 7055-7072, 7104-7122

This stipulation applies during the time periods for subsistence-harvesting described below for each community.

Subsistence Whaling and Marine Mammal Hunting Activities by Community

Barrow: Spring bowhead whaling occurs from April to June; Barrow hunters hunt from ice leads from Point Barrow southwestward along the Chukchi Sea coast to the Skull Cliff area. Fall whaling occurs from August to October in an area extending from approximately 10 miles west of Barrow to the east side of Dease Inlet. Beluga whaling occurs from April to June in the spring leads between Point Barrow and Skull Cliff; later in the season, belugas are hunted in open water around the barrier islands off Elson Lagoon. Walrus are harvested from June to September from west of Barrow southwestward to Peard Bay. Polar bear are hunted from October to June generally in the same vicinity used to hunt walrus. Seal hunting occurs mostly in winter, but some open-water sealing is done from the Chukchi coastline east as far as Dease Inlet and Admiralty Bay in the Beaufort Sea.

Wainwright: Bowhead whaling occurs from April to June in the spring leads offshore of Wainwright, with whaling camps sometimes as far as 10 to 15 miles from shore. Wainwright hunters hunt beluga whales in the spring lead system from April to June but only if no bowheads are in the area. Later in the summer, from July to August, belugas can be hunted along the coastal lagoon systems. Walrus hunting occurs from July to August at the southern edge of the retreating pack ice. From August to September, walrus can be hunted at local haulouts with the focal area from Milliktagvik north to Point Franklin. Polar bear hunting occurs primarily in the fall and winter around Icy Cape, at the headland from Point Belcher to Point Franklin, and at Seahorse Island.

Point Lay: Because Point Lay's location renders it unsuitable for bowhead whaling, beluga whaling is the primary whaling pursuit. Beluga whales are harvested from the middle of June to the middle of July. The hunt is concentrated in Naokak and Kukpowruk Passes south of Point Lay where hunters use boats to herd the whales into the shallow waters of Kasegaluk Lagoon where they are hunted. If the July hunt is

unsuccessful, hunters can travel as far north as Utukok Pass and as far south as Cape Beaufort in search of whales. When ice conditions are favorable, Point Lay residents hunt walrus from June to August along the entire length of Kasegaluk Lagoon, south of Icy Cape, and as far as 20 miles offshore. Polar bear are hunted from September to April along the coast, rarely more than 2 miles offshore.

Point Hope: Bowhead whales are hunted from March to June from whaling camps along the ice edge south and southeast of the point. The pack-ice lead is rarely more than 6 to 7 miles offshore. Beluga whales are harvested from March to June in the same area used for the bowhead whale hunt. Beluga whales can also be hunted in the open water later in the summer from July to August near the southern shore of Point Hope close to the beaches, as well as areas north of the point as far as Cape Dyer. Walruses are harvested from May to July along the southern shore of the point from Point Hope to Akoviknak Lagoon. Point Hope residents hunt polar bears primarily from January to April and occasionally from October to January in the area south of the point and as far out as 10 miles from shore.

This stipulation will remain in effect until termination or modification by the Department of the Interior after consultation with appropriate agencies.

Stipulation No. 5. Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Marine Mammal 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. This stipulation applies to exploration, development, and production operations on a lease within the blocks identified below during periods of subsistence use related to bowhead whales, beluga whales, ice seals, walruses, and polar bears. The stipulation also applies to support activities, such as vessel and aircraft traffic, that traverse the blocks listed below or Federal waters landward of the sale during periods of subsistence use regardless of lease location. Transit for human safety emergency situations shall not require adherence to this stipulation.

This stipulation applies to the following blocks:

NR02-06, Chukchi Sea:

6624, 6625, 6674, 6675, 6723-6725, 6773-6775, 6822, 6823, 6872

NR03-02, Posey:

6872, 6873, 6918-6923, 6967-6973, 7016-7023, 7063-7073, 7112-7123

NR03-03, Colbert

6674, 6723, 6724, 6771-6774, 6820-6824, 6869-6874, 6918-6924, 6966-6974, 7015-7024, 7064-7074, 7113-7124

NR03-04, Solivik Island

6011-6023, 6060-6073, 6109-6122, 6157-6171, 6206-6219, 6255-6268, 6305-6317, 6354-6365, 6403-6414, 6453-6462, 6502-6511, 6552-6560, 6601-6609, 6651-6658, 6701-6707, 6751-6756, 6801-6805, 6851-6854, 6901-6903, 6951, 6952, 7001

NR03-05, Point Lay West

6014-6024, 6062-6073, 6111-6122, 6160-6171, 6209-6221, 6258-6269, 6307-6317, 6356-6365, 6406-6414, 6455-6462, 6503-6510, 6552-6558, 6602-6606, 6652-6655, 6702, 6703

NR04-01, Hanna Shoal

6223, 6267-6273, 6315-6323, 6363-6373, 6411-6423, 6459-6473, 6507-6523, 6556-6573, 6605-6623, 6654-6671, 6703-6721, 6752-6771, 6801-6819, 6851-6868, 6901-6916, 6951-6964, 7001-7010, 7051-7059, 7101-7107

NR04-02, Barrow

6003-6022, 6052-6068, 6102-6118, 6151-6164, 6201-6214, 6251-6262, 6301-6312, 6351-6359, 6401-6409, 6451-6456, 6501-6506, 6551, 6552, 6601, 6602

NR04-03, Wainwright

6002-6006, 6052, 6053

NS04-08, (Unnamed)

6816-6822, 6861-6872, 6910-6922, 6958-6972, 7007-7022, 7055-7072, 7104-7122

Prior to submitting an exploration plan or development and production plan (including associated oil-spill response plans) to the MMS for activities proposed during subsistence-use critical times and locations described below for bowhead whale and other marine mammals, the lessee shall consult with the North Slope Borough, and with directly affected subsistence communities (Barrow, Point Lay, Point Hope, or Wainwright) and co-management organizations to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. Organizations currently recognized by the NMFS and the FWS for the co-management of the marine mammals resources are the Alaska Eskimo Whaling Commission, the Alaska Beluga Whale Committee, the Alaska Eskimo Walrus Commission, the Ice Seal Commission, and the Nanuk Commission. 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 marine mammal 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. The lessee 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 response plans) to the directly affected communities and the appropriate co-management organizations at the time the plans 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, NMFS, FWS, the appropriate co-management organizations, and any communities that could be directly affected by the proposed activity may request that the RS/FO assemble a group consisting of representatives from the parties to specifically address the conflict and attempt to resolve the issues. The RS/FO will invite appropriate parties to a meeting 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. Activities on a lease may be restricted if 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-harvesting activities occur generally in the areas and time periods listed below.

Subsistence Whaling and Marine Mammal Hunting Activities by Community

Barrow: Spring bowhead whaling occurs from April to June; Barrow hunters hunt from ice leads from Point Barrow southwestward along the Chukchi Sea coast to the Skull Cliff area; fall whaling occurs from August to October in an area extending from approximately 10 miles west of Barrow to the east side of Dease Inlet. Beluga whaling occurs from April to June in the spring leads between Point Barrow and Skull Cliff; later in the season, belugas are hunted in open water around the barrier islands off Elson Lagoon. Walrus are harvested from June to September from west of Barrow southwestward to Peard Bay. Polar bear are hunted from October to June generally in the same vicinity used to hunt walruses. Seal hunting occurs mostly in winter, but some open-water sealing is done from the Chukchi coastline east as far as Dease Inlet and Admiralty Bay in the Beaufort Sea.

Wainwright: Bowhead whaling occurs from April to June in the spring leads offshore of Wainwright, with whaling camps sometimes as far as 10 to 15 miles from shore. Wainwright hunters hunt beluga whales in the spring lead system from April to June but only if no bowheads are in the area. Later in the summer, from July to August, belugas can be hunted along the coastal lagoon systems. Walrus hunting occurs from July to August at the southern edge of the retreating pack ice. From August to September, walruses can be hunted at local haulouts with the focal area from Milliktagvik north to Point Franklin. Polar bear hunting occurs primarily in the fall and winter around Icy Cape, at the headland from Point Belcher to Point Franklin, and at Seahorse Island.

Point Lay: Because Point Lay's location renders it unsuitable for bowhead whaling, beluga whaling is the primary whaling pursuit. Beluga whales are harvested from the middle of June to the middle of July. The hunt is concentrated in Naokak and Kukpowruk Passes south of Point Lay where hunters use boats to herd the whales into the shallow waters of Kasegaluk Lagoon where they are hunted. If the July hunt is

unsuccessful, hunters can travel as far north as Utukok Pass and as far south as Cape Beaufort in search of whales. When ice conditions are favorable, Point Lay residents hunt walrus from June to August along the entire length of Kasegaluk Lagoon, south of Icy Cape, and as far as 20 miles offshore. Polar bears are hunted from September to April along the coast, rarely more than 2 miles offshore.

Point Hope: Bowhead whales are hunted from March to June from whaling camps along the ice edge south and southeast of the point. The pack-ice lead is rarely more than 6 to 7 miles offshore. Beluga whales are harvested from March to June in the same area used for the bowhead whale hunt. Beluga whales can also be hunted in the open water later in the summer from July to August near the southern shore of Point Hope close to the beaches, as well as areas north of the point as far as Cape Dyer. Walrus are harvested from May to July along the southern shore of the point from Point Hope to Akoviknak Lagoon. Point Hope residents hunt polar bears primarily from January to April and occasionally from October to January in the area south of the point and as far out as 10 miles from shore.

Stipulation No. 6. Pre-Booming Requirements for Fuel Transfers. Fuel transfers (excluding gasoline transfers) of 100 barrels or more 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. The lessee's oil spill response plans must include procedures for the pre-transfer booming of the fuel barge(s).

Stipulation No. 7. Measures to Minimize Effects to Spectacled and Steller's Eiders During Exploration Activities. This stipulation will minimize the likelihood that spectacled and Steller's eiders will strike drilling structures or vessels. The stipulation also provides additional protection to eiders within the blocks listed below and Federal waters landward of the sale area, including the Ledyard Bay Critical Habitat Area, during times when eiders are present.

(A) General conditions: The following conditions apply to all exploration activities.

(1) An EP must include a plan for recording and reporting bird strikes. All bird collisions (with vessels, aircraft, or drilling structures) shall be documented and reported within 3 days to MMS. Minimum information will include species, date/time, location, weather, identification of the vessel, and aircraft or drilling structure involved and its operational status when the strike occurred. Bird photographs are not required, but would be helpful in verifying species. Lessees are advised that the FWS does not recommend recovery or transport of dead or injured birds due to avian influenza concerns.

(2) The following conditions apply to operations conducted in support of exploratory and delineation drilling.

(a) Surface vessels (e.g., boats, barges) associated with exploration and delineation drilling operations should avoid operating within or traversing the listed blocks or Federal waters between the listed blocks and the coastline between April 15 and June 10, to the maximum extent practicable. If surface vessels must traverse this area during this period, the surface vessel operator will have ready access to wildlife hazing equipment (including at least three *Breco* buoys or similar devices) and

personnel trained in its use; hazing equipment may located onboard the vessel or on a nearby oil spill response vessel, or in Point Lay or Wainwright. Lessees are required to provide information regarding their operations within the area upon request of MMS. The MMS may request information regarding number of vessels and their dates of operation within the area.

(b) Except for emergencies or human/navigation safety, surface vessels associated with exploration and delineation drilling operations will avoid travel within the Ledyard Bay Critical Habitat Area between July 1 and November 15. Vessel travel within the Ledyard Bay Critical Habitat Area for emergencies or human/navigation safety shall be reported within 24 hours to MMS.

(c) Aircraft supporting drilling operations will avoid operating below 1,500 feet above sea level over the listed blocks or Federal waters between the listed blocks and the coastline between April 15 and June 10, or the Ledyard Bay Critical Habitat Area between July 1 and November 15, to the maximum extent practicable. If weather prevents attaining this altitude, aircraft will use pre-designated flight routes. Pre-designated flight routes will be established by the lessee and MMS, in collaboration with the FWS, during review of the EP. Route or altitude deviations for emergencies or human safety shall be reported within 24 hours to MMS.

(B) Lighting Protocols. The following lighting requirements apply to activities conducted between April 15 and November 15 of each year.

(1) Drilling Structures: Lessees must adhere to lighting requirements for all exploration or delineation drilling structures so as to minimize the likelihood that migrating marine and coastal birds will strike these structures. Lessees are required to implement lighting requirements aimed at minimizing the radiation of light outward from exploration or delineation drilling structures to minimize the likelihood that birds 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 while operating on a lease or if staged within nearshore Federal waters pending lease deployment.

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 that could be applied to their specific facilities and operations to reduce

outward light radiation. Lessees must provide MMS with a written statement of measures that will be or have been taken to meet the lighting objective, and must submit this information with an EP when it is submitted for regulatory review and approval pursuant to 30 CFR 250.203.

(2) Support Vessels: Surface support vessels will minimize the use of high-intensity work lights, especially when traversing the listed blocks and federal waters between the listed blocks and the coastline. Exterior lights will be used only as necessary to illuminate active, on-deck work areas during periods of darkness or inclement weather (such as rain or fog), otherwise they will be turned off. Interior lights and lights used during navigation could remain on for safety.

For the purpose of this stipulation, the listed blocks are as follows:

NR02-06, Chukchi Sea:

6624, 6625, 6674, 6675, 6723-6725, 6773-6775, 6822, 6823, 6872

NR03-02, Posey:

6872, 6873, 6918-6923, 6967-6973, 7016-7023, 7063-7073, 7112-7123

NR03-03, Colbert

6674, 6723, 6724, 6771-6774, 6820-6824, 6869-6874, 6918-6924, 6966-6974, 7015-7024, 7064-7074, 7113-7124

NR03-04, Solivik Island

6011-6023, 6060-6073, 6109-6122, 6157-6171, 6206-6219, 6255-6268, 6305-6317, 6354-6365, 6403-6414, 6453-6462, 6502-6511, 6552-6560, 6601-6609, 6651-6658, 6701-6707, 6751-6756, 6801-6805, 6851-6854, 6901-6903, 6951, 6952, 7001

NR03-05, Point Lay West

6014-6024, 6062-6073, 6111-6122, 6160-6171, 6209-6221, 6258-6269, 6307-6317, 6356-6365, 6406-6414, 6455-6462, 6503-6510, 6552-6558, 6602-6606, 6652-6655, 6702, 6703

NR04-01, Hanna Shoal

6223, 6267-6273, 6315-6323, 6363-6373, 6411-6423, 6459-6473, 6507-6523, 6556-6573, 6605-6623, 6654-6671, 6703-6721, 6752-6771, 6801-6819, 6851-6868, 6901-6916, 6951-6964, 7001-7010, 7051-7059, 7101-7107

NR04-02, Barrow

6003-6022, 6052-6068, 6102-6118, 6151-6164, 6201-6214, 6251-6262, 6301-6312, 6351-6359, 6401-6409, 6451-6456, 6501-6506, 6551, 6552, 6601, 6602

NR04-03, Wainwright

6002-6006, 6052, 6053

NS04-08, (Unnamed)

6816-6822, 6861-6872, 6910-6922, 6958-6972, 7007-7022, 7055-7072, 7104-7122

Nothing in this stipulation 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.

Attachment B
Communication and Consultation with North Slope Subsistence Stakeholders

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TABLE OF CONTENTS

<u>Document</u>	<u>Date</u>
Barrow POC Meeting Comment Analysis Table from POC Meeting in Barrow, Alaska Sign-in Sheets from Shell's POC Presentation in Barrow, Alaska	March 21, 2011
Wainwright POC Meeting Comment Analysis Table from POC Meeting in Wainwright, Alaska Sign-in Sheets from Shell's POC Meeting in Wainwright, Alaska	March 23, 2011
Point Lay POC Meeting Comment Analysis Table from POC Meeting in Point Lay, Alaska Sign-in Sheets from Shell's POC Meeting in Point Lay, Alaska	March 25, 2011
Point Hope POC Meeting Comment Analysis Table from POC Meeting in Point Hope, Alaska Sign-in Sheets from Shell's POC Meeting in Point Hope, Alaska	March 28, 2011
Kiana Community Meeting Comment Analysis Table from Community Meeting in Kiana, Alaska Sign-in Sheets from Shell's Community Meeting in Kiana, Alaska	March 29, 2011
Kotzebue Community Meeting Comment Analysis Table from Community Meeting in Kotzebue, Alaska Sign-in Sheets from Shell's Community Meeting in Kotzebue, Alaska	March 30, 2011
Kivalina Community Meeting Comment Analysis Table from Community Meeting in Kivalina, Alaska Sign-in Sheets from Shell's Community Meeting in Kivalina, Alaska	March 31, 2011
NSB Assembly Meeting Comment Analysis Table from NSB Assembly Meeting in Barrow, Alaska	April 5, 2011
POC Posters Poster's for POC and Community Meetings	March 21-31, 2011
Power Point Presentations Presentation for: POC and Community Meetings	March 21-31, 2011

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Issues	Comments	Shell Response	Mitigation Measures*
Credible Science: 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
Operational Impacts: 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
Permits: 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.	
Quality of Engagement: 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
Value Proposition: Jobs	I would enjoy joining an oil response team in near future for offshore drilling		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).



SHELL EXPLORATION AND PRODUCTION COMPANY
SIGN-IN SHEET – Barrow Plan of Cooperation Community Open House Meeting
Inupiat Heritage Center, Barrow, Alaska
March 21, 2011

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Howard Peetod	Self	1888	7502		
Susan McCumber	Self	1388	7368		bluemoon_yurt@yahoo.com
Myron McCumber	Self	1388	7368		

Unclear score



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SIGN-IN SHEET – Barrow Plan of Cooperation Community Open House Meeting
Inupiat Heritage Center, Barrow, Alaska
March 21, 2011

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Marilyn Arungonuk	Self	Box 692 Brw	852-5602		
Richard Maynard	UIR	61A	852-3909		
RICKL RICE	SELF	PO 1230	852-7697		
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March 21, 2011

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Patricia M. Aucopyana	self	Box 896	6337		
Walter Akpik	Self	Box 322	5124	—	—
KATH LEARY	Ilisagvik	Box 749	852-1868		
Glen H. Siedak	self	Box 1532	852-3624	—	—
Jerry Alyuk	self	Box 233	852-2771	—	—
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Larissa Keldie	self	4 7	20		
EVELYN Rubottom	Self	809			
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Robert Lisbourn		Box 224	3100		
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Perry Marumeaz		GEN. DEL BRW AK			



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George Suwa		P.O. Box 828	852-6467		
NORA ADAMS		Box 176	852-2755		

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Issues	Comments	Shell Response	Mitigation Measures*
Credible Science: 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
Operational Impacts: 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
Permits: 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
Quality of Engagement: 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
Threat to Subsistence: 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
Value Proposition: 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:

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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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SIGN-IN SHEET – Wainwright Plan of Cooperation Community Open House Meeting
Alak School Community Center, Wainwright, Alaska
March 23, 2011

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Leo Siqua					
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Terry Tagarook	Self				
Bonfance	Self				



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Galea Nayakik					
Nellie Agubik					
Elizabeth Phillips		po box 113			
Nathaniel Phillips		po box 113			
Cardyn Alpak		Box 126 - Atn Al			
Ellen Phillips		Box 113			



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Byrna Panik		Box 147 AM			
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Leannette Segevan					
Sandra Peetok					
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Ray Joe Akpik		Box 126	763-3924		
Fannie Stone		Box 126	763-3924		
Joel Akpik		Box 126	763-3924		
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<i>madisch Natchoodok</i>	<i>self</i>				
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<i>Fannie E. Ahmaogak</i>		<i>Box 13 Ain AK</i>			
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<i>DAVID NINGEOK JR</i>		<i>Box 144</i>	<i>763-0259</i>		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Rosellen Swan		Box 186	907 263022		

Issues	Comments	Shell Response	Mitigation Measures*
Operational Impacts: 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
Permits: 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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Point Lay Community Center, Point Lay, Alaska
March 25, 2011

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Suse Neakok	myself	—	—	—	—
Carl FHa	—	—	—	—	—
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
Jacob Stalkor Jr	—	P.O. Box 59113 Point Lay AK 99759	907-833-0130	—	inspire2@yahoo.com
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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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 Fovellie		Po Box 59078 Point Lay AK			



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GREGG WILBANKS		PO 59083	833-0034		gregg.wilbanks@ usbsd.org

Issues	Comments	Shell Response	Mitigation Measures*
<p>Credible Science: 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
ENGO Opposition: 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*
Offshore Education: 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
Operational Impacts: 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

Issues	Comments	Shell Response	Mitigation Measures*
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>Permits: Process</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
Quality of Engagement: 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
Threat to Subsistence: 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
Value Proposition: 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:

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G-Robust Marine Mammal Monitoring Protocol

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

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

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Rodney Hooper		Box P.O. 282			
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Ray P. Jile		P.O. Box 210 (Bessie)			
Florence Oultolite		Pt. Hope Alaska P.O. Box 209			
Charles K.		11	11		
Leona Snyder		Point Hope			
Mae Han		Amv			



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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			
Hloren Koonub	Tikigaq	P.O. Box 85	—	—	—
Ricky N.	tikigaq				
Raymond Att.	Tikigaq	P.O. Box 133			



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Aaron Ohtella	PHO, AK	Box 251 PHO AK 99766			
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Elice Nash	PHO	P.O. Box 206 Pt. Hope, AK			



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TOMI LORD	Box 1586 B	Box 1589 Barrow, AK	852-3670		
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Rhoda Long	Box 303	PO Box 303	(907)368-130		
AQQI Hank					
Morris Nasuok Pak		Box 131			
Lydia Nasuok Pak	#10	PO Box 292	412-0893		
Boris Ipabok		PO box 292	412-0893		



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Jane NTSkovens	SELF	P.O. Box 62	368-2662		
Joe Rankin	self.	P.O. Box 186	368-2727		
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Diantha Oktilik		Box 307			
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Minne Johnson	PHO	Box 171	268-8551		
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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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Heather Minix					
Amber Journey	Self	Box 84	368-2015		
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George Vincent					
Joe Omnik	Self	Box 208	368-4542		
Ella Omnik	Self	Box 184	368-2143		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
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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*
Cost/Access to Energy: 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
Operational Impacts: 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
Quality of Engagement: 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
Threat to Subsistence: 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 th 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*
Value Proposition: Jobs	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 th 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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Kiana School Gymnasium, Kiana, Alaska
March 29, 2011

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Rose A. Wood		P.O. Box 18 Kiana AK, 99749	475-2028		
Carl Carlson		Box 83 Kiana			
Gilbert Thomas		Box 08 Kiana	475-5104		
Levi 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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Jack Reed		Box 33	475-5060		
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Elizabeth Bayou		Box 73	907 475-2147		
Ben Atoruk		Box 73	907 475-2147		
Daisy Johnson		Box 42	475 5016		
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Kayana Barr		PO Box 103 Kiana AK	475-2504		
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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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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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Nelson Walker		Box 96 Kiana AK			
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Blanche Cook		Box 4 Kiana AK			
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Dale Stotts	Kiana Traditional Council	PO Box 61 Kiana 99749	907-444-2841		grantwriter@katyaag.org



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Lyla Ahwinnene		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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Amy J Morris		Box 112 Kiana, AK 99749			
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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*
Quality of Engagement: Positive/Feedback	A suggestion was made that a good time for Shell to come to Kotzebue would be the Trade Fair on the 8 th and 9 th 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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Ryan West		PO Box 1204 99752	442-2614		



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Kathy Koth					
Clay Greene					
Warren Stalker					
Beulah Jodok					
Leon Downey					
As M					
Minnie Kubalack					



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Chester Fallet	KIC	Box 922 OTZ	442-3786	442-7678	
John Chase	NAB		2800 X112		
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Aggie Kowanna		Box 21	368-1234		
Jerrri Kowanna		Box 21	368-1234		



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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
Vkallayseeq & Iglujuq	NWAB	Kotzebue	2500	3740	teleaskle@nwabor.org
Anthony Buttram	NWAB	142 Kotzebue AK 99752	4120937		NE NE
Juan Zungu	NWAB	516 Shore ave	2314		JuanZungab2@yahoo.com

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Issues	Comments	Shell Response	Mitigation Measures*
Operational Impacts: 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
Permits: 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

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 – 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
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	⁹⁹⁷⁵⁰ Kivalina AK	PO BOX 50046	645-5101		
Carlos Hawley	⁹⁹⁷⁵⁰ Kivalina AK	BOX 5004			
Ernest Hawley	Kivalina AK	Box 4	Cell phone 645-5176		



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McQueen School Gymnasium, Kivalina, Alaska
March 31, 2011

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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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
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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McQueen School Gymnasium, Kivalina, Alaska
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		



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
Stanley Hawley	KIVALINA IRA office	P.O. Box 50051 Kivalina, AK, 99750	907-645-2141	907-645-2193	tribeadmin@kivalinix.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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March 31, 2011

Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Lona Adams		Box 50050	645-5814	645-2124 School	lekadams@yahoo.com
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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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Harry Norton		PO BOX 50066 Kivalina AK 99750	907-645 2189		Harry_Norton 06@yahoo. com
Maria Koenig		PO BOX 50066 Kivalina AK 99750	907 645 5074		



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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Dolly E. Foster		Kivalina, AK 99750	645-5121	645-2169	dolly.foster@inutek.net
Kella Leonard		Kivalina 99750	645-5017	⊘	⊘
Brenda Hawley		Bx 36 KVLAK 99750			
Emeline Knox		Box 45 KVLAK 99750	645-2154		
Cheryl Knox		Box 45 KVLAK 99750	645-2154		
Russella 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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Name (Please Print)	Representing	Mailing Address	Phone No.	Fax No.	Email
Lucy S. Adams		PO Box 50052 Kivalina	645-2136	none	
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					



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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:

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2011 Proposed Mitigation Measures

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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).



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, AEWG, 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.

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



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

POTENTIAL BENEFITS: REVENUE

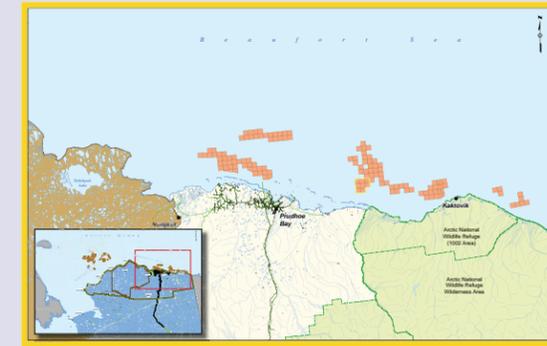
- Tax base from pipelines & support bases to address declining revenues
- Extending the life of TAPS and the pipeline tax base
- Additional infrastructure which could make other onshore fields economic and increase revenue



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 (4.8x10⁹ m³) 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

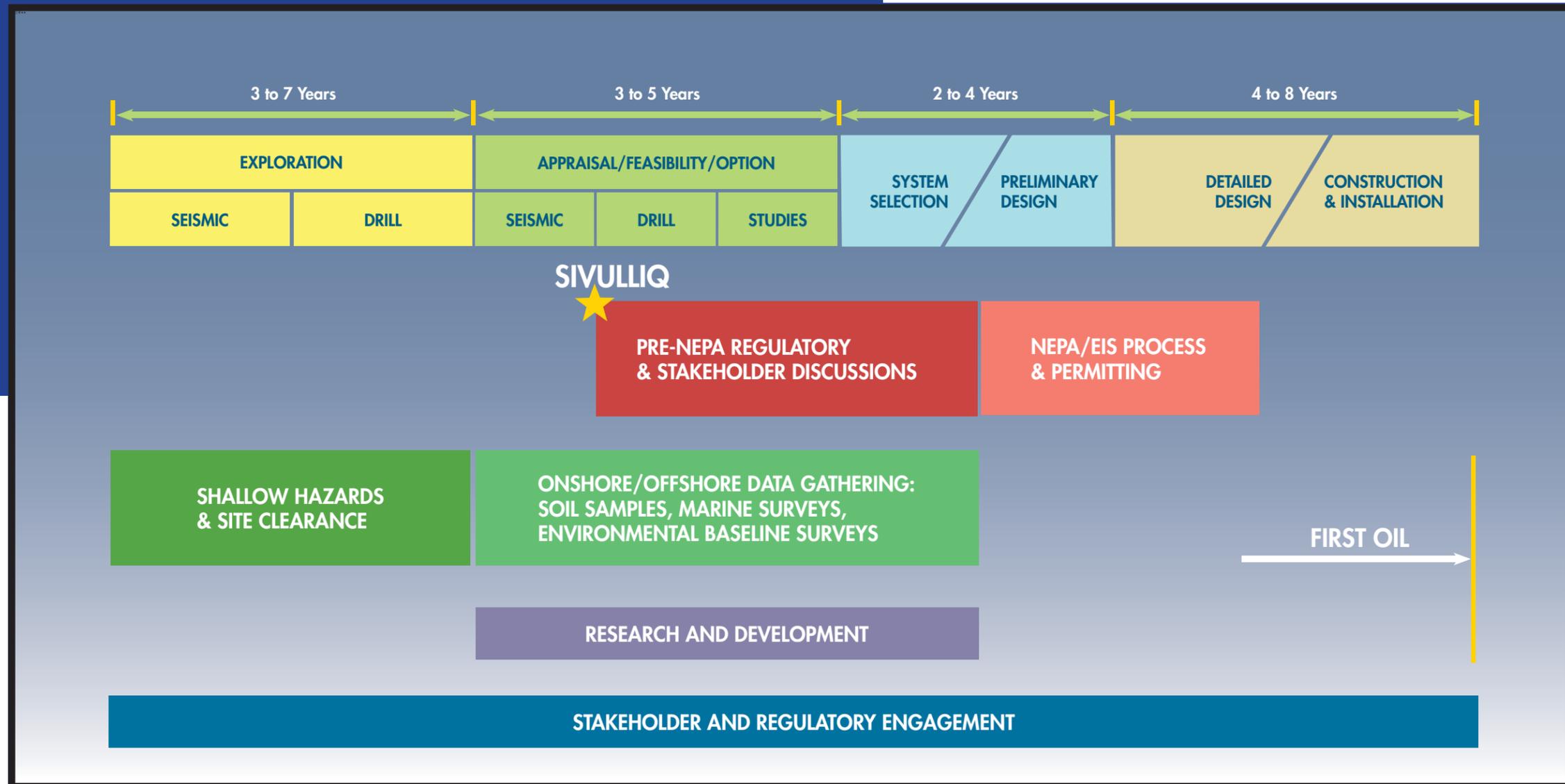
To succeed in meeting mutual goals, we must move forward together based on mutual respect and open dialogue:

- 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





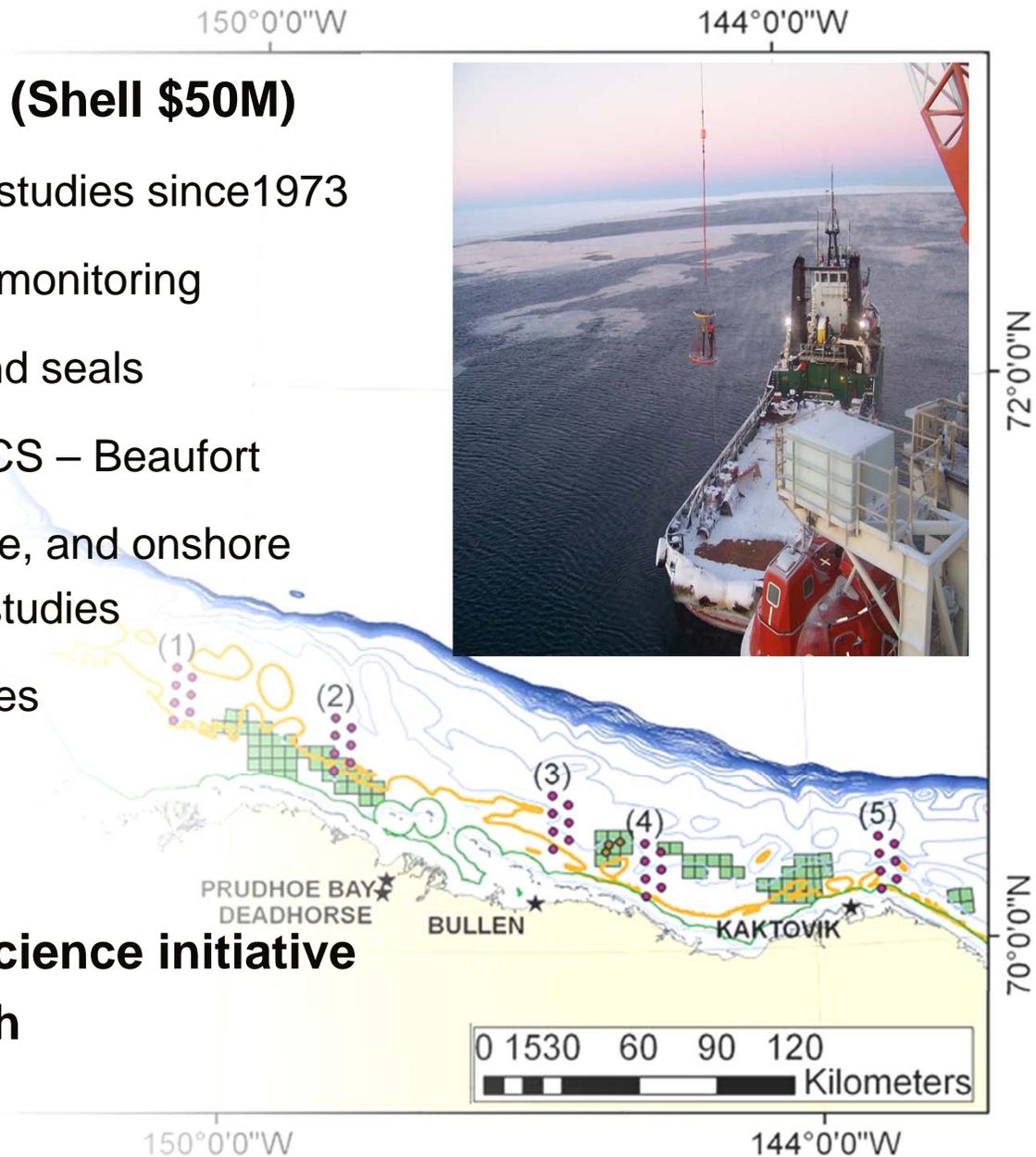
Science

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

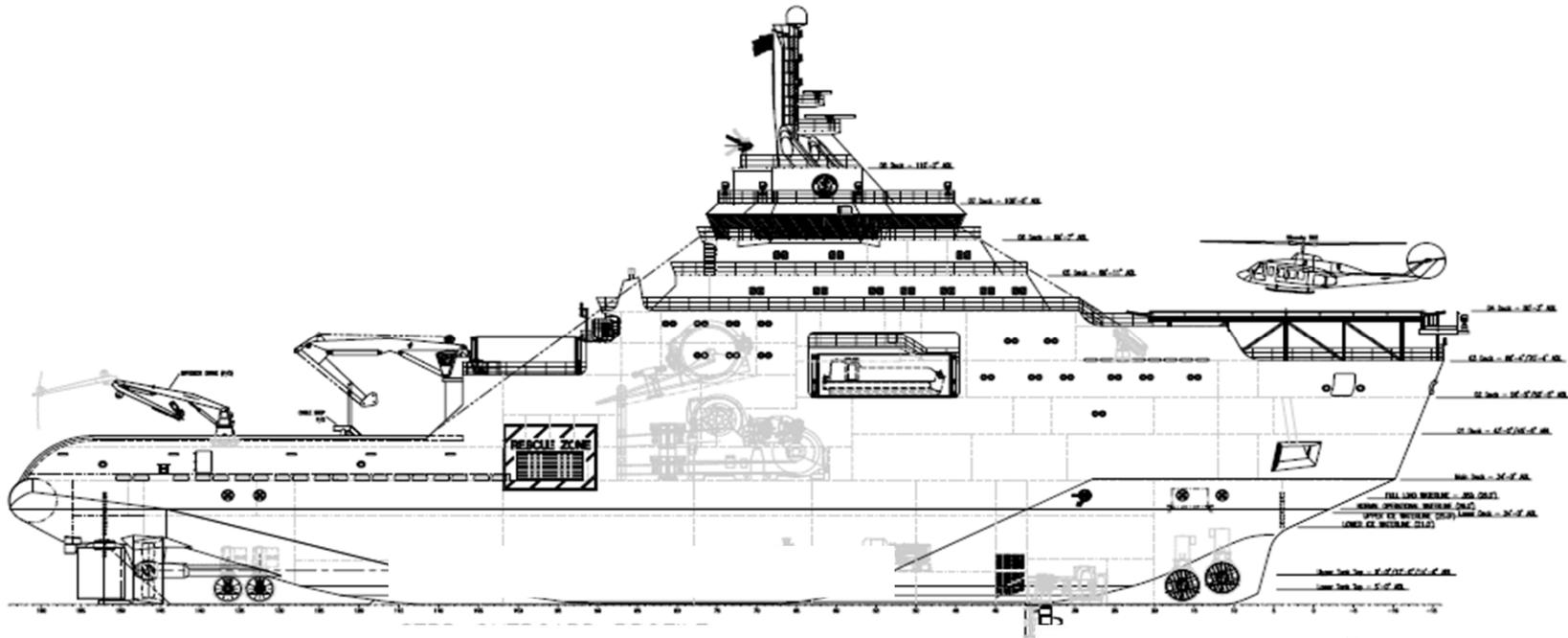


Arctic Endeavor

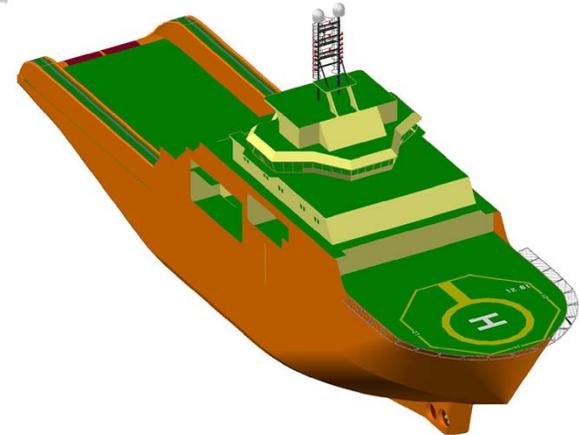
- Dedicated Oil Spill Response Barge with Tug Assist
- Ice Strengthened
- Onboard Field Command and Communications Center
- 2 Lamor LSC-5 Brush Skimmers & Power Packs
- Staging and Deployment of Boom-tending Work Boats and 249-bbl barges
- Staging and Deployment of 47' Skimmer with built-in Brush Skimmers
- 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
Chukchi Sea Communication Plan

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COMMUNICATION PLAN
EXPLORATION DRILLING PROGRAM
CHUKCHI SEA, 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 (ICS), and village Whaling Captains Associations (WCA). Each planned drilling season in the Chukchi Sea will begin with transit through the Bering Strait into the Chukchi Sea on or after July 1, then on location at a drill site on or about July 4 and end on or about October 31.

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 Gulf of Mexico 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 beluga and bowhead whale migrations in the Chukchi Sea 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 Sale 193 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 (SAs), 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 MMOs 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 Chukchi Sea 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 through 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 within 1,500 ft (457 m) of marine mammals or 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 drillship 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 and Point Hope once transiting of vessels begins through Chukchi Sea, during drilling activities, and during mobilization from the Chukchi Sea.