

ATTACHMENT IV
Point Thomson Polar Bear and Wildlife Interaction Plan



December 2009

Polar Bear and Wildlife Interaction Plan

Point Thomson Project
North Slope, Alaska



ExxonMobil

TABLE OF CONTENTS

1.0	Introduction.....	1
2.0	Subsistence Plan of Cooperation	2
3.0	Background on the Interaction Plan	3
4.0	Education and Training.....	4
4.1	Individual Worker Responsibilities	5
4.2	Bear Monitor Responsibilities.....	5
4.3	Coordination of Tasks among ExxonMobil Groups	6
5.0	Site Design and Operations.....	6
5.1	Detecting Bears	6
5.2	Limiting Bear Access	7
5.3	Bear-Resistant Storage.....	8
5.4	Food and Garbage Management.....	8
5.5	Sewage and Wastewater	9
5.6	Snow Removal.....	9
5.7	Beached Carcass Removal.....	9
5.8	Regular Maintenance and Safety Checks.....	9
5.9	Communications/Bear Warnings.....	9
6.0	Deterrence and Hazing.....	10
6.1	Bear Deterrence Training.....	10
6.2	Hazing/Deterrence Principles.....	11
6.3	Hazing/Deterrence Tools and Techniques	11
6.4	Deterrents to be Kept On-Site.....	12
6.5	Bear Behavior and Deterrence.....	12
7.0	Ice Road/Off-Site Operations.....	13
7.1	Bear Interaction Procedures	14
7.2	Den Detection Techniques.....	15
7.3	Contingency Plan for Road Closure.....	17
8.0	Oil Spill Response Plans.....	18
9.0	Other Wildlife Interactions	18
9.1	Grizzly Bears.....	19
9.2	Pacific Walrus	19
9.3	Arctic Fox/Red Fox	19
9.4	Caribou	20
9.5	Arctic Ground Squirrels	20
9.6	Ravens and Gulls.....	20
9.7	Other Migratory Birds.....	20
10.0	Polar Bear Reporting and Record Keeping.....	21
11.0	Contact Lists.....	21
12.0	Implementation/Evaluation/Feedback	23

APPENDICES

APPENDIX A Polar Bear Sighting Report Forms

APPENDIX B Grizzly Bear Observation Report Form

APPENDIX C Walrus Sighting Report Form

APPENDIX D Protocols for Bear Hazing

APPENDIX E Detected Den Response Protocols

APPENDIX F Ice Road Closure Protocols

FIGURES

FIGURE 1 Point Thomson Project Activity Map

ACRONYMS AND ABBREVIATIONS

ACS	Alaska Clean Seas
ADF&G	Alaska Department of Fish and Game
AOGA	Alaska Oil and Gas Association
AOGCC	Alaska Oil and Gas Conservation Commission
C-Plan	Contingency Plan
CFR	Code of Federal Regulations
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ESA	Endangered Species Act
FLIR	Forward Looking Infrared
km	kilometer
LOA	Letter of Authorization
LRAD	Long range acoustic device
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
NSB	North Slope Borough
NSTC	North Slope Training Cooperative
PTU	Point Thomson Unit
SPCC	Spill Prevention Control and Countermeasure
USFWS	United States Fish and Wildlife Service
USGS	United State Geologic Survey

1.0 INTRODUCTION

ExxonMobil, as Operator and on behalf of the Point Thomson leaseholders, is drilling the PTU-15 and PTU-16 wells in accordance with the February 10, 2009, Plan of Operations and plans to drill an onsite disposal well at the Point Thomson Central Pad (gravel pad used for the PTU No. 3 well). Seasonal barge traffic with shallow draft landing craft or barges that land on the beach, an ice airstrip, and a 48-mile ice road will all be used to support the operations. The wells will predominantly be drilled during the winter. In addition to these activities, in the winter season of 2009-2010, ExxonMobil will perform well remediation and rehabilitation work at various sites within the general Point Thomson area in compliance with Alaska Oil and Gas Conservation Commission (AOGCC) requirements (Figure 1). These efforts may include well re-entry and well plugging activities and gravel pad remediation.

The polar bear is a marine mammal species protected by provisions of the Marine Mammal Protection Act (MMPA) and is a threatened species under the Endangered Species Act (ESA). The ESA listing was accompanied by a special rule for the polar bear that “generally adopts existing conservation regulatory requirements under the MMPA and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as the appropriate regulatory provisions for this threatened species.” The MMPA prohibits the “taking” of marine mammals except for specific authorized purposes and conditions. “Take”, as defined by the MMPA, means to “harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal”. “Harassment” has been further defined as, any act which:

- i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or
- (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

The federal agency responsible for the management of polar bears is the United States Fish and Wildlife Service (USFWS). The USFWS has published regulations for the issuance of Letters of Authorization (LOA), under Title 50 Code of Federal Regulation (CFR) Part 18, Subpart J, pertaining to the taking of polar bears incidental to oil and gas exploration, development, and production activities in the Beaufort Sea and the adjacent northern coast from 2006-2011 (71 FR 43926). This LOA applies only to disrupting polar bear behavioral patterns (Level B harassment). Individual oil and gas operators must apply to the USFWS for coverage of their development activities under this LOA. This Polar Bear and Wildlife Interaction Plan will be submitted annually with ExxonMobil’s LOA application to USFWS in partial fulfillment of the requirements of 50 CFR 18, Subpart J.

The USFWS has also issued separate LOAs to North Slope operators authorizing intentional takes of polar bears by harassment (hazing) in order to deter bears when they threaten human safety or property or to prevent them from habituating to human encampments. These LOAs are issued under Sections 101 (a)(4)(A), 109 (h), and 112 (c) of the MMPA and are issued only for specially trained personnel and under certain operational conditions. This Polar Bear and Wildlife Interaction Plan establishes ExxonMobil’s policies and procedures relating to intentional

takes of polar bears by trained personnel and will be submitted as part of the application for an LOA for take by harassment.

Section 101 (c) of the MMPA allows, without prior authorization, the taking of a polar bear, including lethal take, if such taking is imminently necessary in self-defense or to save the life of a person in immediate danger. Any such takings must be reported to the USFWS Marine Mammal Management Office immediately. This Polar Bear and Wildlife Interaction Plan contains the appropriate contact information and reporting forms if any of these emergency situations occur.

It is ExxonMobil policy to protect the health and safety of people and to protect the environment. This Polar Bear and Wildlife Interaction Plan provides work crews with an understanding of the importance of polar bear safety precautions and identifies practices intended to minimize the opportunities for incidental encounters between polar bears and project personnel and to ensure safety for the bears and humans. Grizzly bears also occur in the Point Thomson area and present similar safety issues. Other than the legal/regulatory aspects, the approaches for avoiding conflicts with polar bears and grizzlies are essentially the same. The procedures for detection and deterrence of polar bears presented in this document will also be applied to grizzly bears in accordance with the standard practices developed jointly by the USFWS and Alaska Department of Fish and Game (ADF&G).

ExxonMobil recognizes that the project routes of travel and the onshore drill sites are areas of wildlife use and is committed to minimizing impacts to wildlife. ExxonMobil will update this Polar Bear and Wildlife Interaction Plan as needed, obtain annual LOAs from the USFWS, and conduct all operations in accordance with those authorizations and the provisions of this plan.

2.0 SUBSISTENCE PLAN OF COOPERATION

The polar bear, caribou, and seals are subsistence resources available to Alaska Natives. Alaska Natives have developed a management plan to ensure that subsistence takes from this Beaufort Sea polar bear population do not exceed biologically acceptable limits. It is possible that some project personnel will be Alaska Natives who, as subsistence hunters, might otherwise be authorized to take polar bears. However, any Alaska Natives employed in the program are also governed by project rules and procedures. During periods when traveling to and from the project area and during active service at the project location, subsistence hunting is not authorized. For example, an Alaska Native employee may be assigned tasks as a polar bear monitor. In the course of these assigned duties, he may be required to use deterrent measures including the use of firearms, which are authorized only because he is a project member designated to carry out such measures, not because he is an Alaska Native who might otherwise be entitled to subsistence hunting rights.

A Subsistence Plan of Cooperation is required by 50 CFR 18, Subpart J to mitigate potential conflicts between oil and gas activities and subsistence hunting. Point Thomson is approximately 60 miles west of Kaktovik, the closest North Slope Village, and approximately 120 miles east of Nuiqsut.

ExxonMobil will conduct its activities in accordance with the Subsistence Plan of Cooperation and mitigation program, which is intended to ensure coordination of ExxonMobil's activities with the villages of Kaktovik and Nuiqsut to mitigate and prevent any potential conflicts when operating in close proximity to subsistence users. Further, the planned activities have minimal potential to interfere with subsistence activities in the area based on previous discussions with Kaktovik and Nuiqsut village representatives and documented subsistence harvests for Kaktovik. ExxonMobil intends to have an ongoing dialogue with these communities and will update or modify its efforts to mitigate subsistence impacts as new information warrants. Barge activities have been planned to avoid the fall subsistence whaling season.

3.0 BACKGROUND ON THE INTERACTION PLAN

This Polar Bear and Wildlife Interaction Plan describes procedures ExxonMobil employees and contractors will follow to protect personnel, bears, and other wildlife. The Beaufort Sea population of polar bears is estimated to be between 1,800 and 2,200 bears, with an average density of about one bear per 30 to 50 square miles. Bears are not evenly distributed, however, bears may concentrate in certain habitats and areas. There also tend to be differences in habitat use by sex and age classes of bears. Subadult bears may be forced to use lower quality habitat by more dominant animals, for example. Male and non-pregnant female polar bears do not hibernate or spend extended periods in dens. However pregnant females enter dens from mid-November to mid-December and usually emerge with cubs from early March to mid-April.

In the Point Thomson vicinity, polar bears may be encountered year round. Polar bears spend time on shore during summers when the ice pack is distant. It will be critical to try to minimize bear encounters and reduce the risks to both people and bears by implementing the Polar Bear and Wildlife Interaction Plan and ensuring that workers are aware of and practice bear-safe behavior. Even though there are serious risks associated with interactions with bears, most hazards can be avoided, and the potential for others can be greatly reduced.

This Polar Bear and Wildlife Interaction Plan not only satisfies permitting requirements, but also provides a relevant, usable approach to reduce threats to people and bears and the impacts of the project on bears in the area.

There are two major aspects of human-bear interactions addressed by this document:

1). Human Impacts on Bears:

- a) Den disturbance/den abandonment/cub mortality (greatest threat to bears).
- b) Possibility of bear mortality from access to improperly stored toxic substances such as antifreeze, or from an oil spill.
- c) Harassment of bears by aircraft, watercraft, or vehicles.
- d) Bears consuming human food and garbage (food-conditioning) or getting too comfortable around people, work sites, or camps (habituation).

2). Bear Impacts on Human Activity:

- a) Injury or death from a bear attack (surprise encounters pose the greatest risk, though attacks are very rare).

- b) Property damage by bears.
- c) Work stoppages (from short delays as a bear moves through an area to extended closures around a den site).

Even though human safety is foremost, the welfare of bears is also important. The goal is to reduce risks to both.

4.0 EDUCATION AND TRAINING

ExxonMobil is committed to providing high-quality, relevant training for all workers. The goal of polar bear awareness training is to encourage safer behavior on the part of workers and to minimize the impacts of the project on polar bears.

ExxonMobil and contractor personnel will receive an environmental orientation as part of the Arctic Pass Training initiative before beginning work tasks in the project area. In most instances, the orientation will be given in Anchorage or upon initial arrival at contractor facilities in Deadhorse. A major feature of the orientation will consist of viewing "Polar Bears: Safety and Survival," a video prepared by the Alaska Oil and Gas Association (AOGA) in cooperation with experts from the federal and state wildlife regulatory agencies. The video is part of the North Slope Training Cooperative (NSTC) training that all personnel must undertake in order to work on the North Slope. This training film covers the life history and the biological status of the Beaufort Sea polar bear population; the MMPA as it applies to polar bears; and the measures to be taken to minimize human/bear encounters. Implementing the early detection and safe avoidance procedures provides the best guarantee that a harmful encounter (for either bears or people) will not occur.

Selected project personnel will also be trained in polar bear and grizzly bear deterrence (see Section 6, Deterrence and Hazing). This training, which has been developed and conducted jointly by ADF&G and the USFWS to address deterrence of polar bears and grizzly bears on the North Slope, will be provided to select individuals who will be authorized to perform hazing operations to protect human health and welfare if necessary. This authorization and any restrictions will be specified under an LOA issued by the USFWS pursuant to Sections 101(a)(4), 109(h), and 112(c) of the MMPA. Only properly trained and authorized personnel will have access to deterrence firearms. A third party contractor with the requisite qualifications may also be retained to provide bear protection and deterrence services. Personnel authorized to haze bears will be required to take a refresher deterrence training course every year.

ExxonMobil will use a number of different approaches to provide and reinforce bear-related safety and conflict prevention messages to ensure that all workers get the necessary, correct information:

- Environmental orientation
- Additional targeted training sessions as needed
- Refresher classes – yearly for designated monitors/authorized hazers
- Safety meetings – used to increase/reinforce awareness of bears, specific issues, how to avoid problems

- Videos – AOGA Polar Bear video, “Staying Safe in Bear Country”
- Posters around the facilities
- Warning signs posted at facility exits and other potentially dangerous locations
- Periodic handouts with relevant sections of this Interaction Plan

4.1 INDIVIDUAL WORKER RESPONSIBILITIES

Proper employee conduct is crucial to the success of the Polar Bear and Wildlife Interaction Plan. Every worker needs to understand that, although ExxonMobil is making efforts to protect people and bears, individuals must also take personal responsibility for educating themselves and avoiding encounters with bears. All workers on the Point Thomson Project will:

- Attend safety training and follow the rules/procedures established for bear interactions.
- Take personal responsibility for safety.
- Be alert whenever in areas where bears might be.
- Always look around before leaving a vehicle or building. Check for bears outside doors, around stairs, corners of buildings, connexes, material storage, and especially areas such as dumpsters or incinerators.
- Be extra cautious when working outside during evening hours and hours of darkness, or when fog or blowing snow reduces visibility. Remain within the lighted work areas.
- Notify others when bears are sighted.
- Avoid bear encounters and retreat to safety when appropriate.
- Never approach bears or linger in exposed areas to take photographs.
- Drive carefully when wildlife is around -- wildlife has the right-of-way.
- Never feed any wildlife (feeding squirrels, foxes, birds, bears, or any wildlife will not be tolerated).
- Always remove food/garbage from vehicles/watercraft/aircraft. Operators must be responsible for the cleanliness of their vehicles/watercraft/aircraft (including pickup truck beds).
- Never litter or pour unfinished beverages (such as sodas or coffee) on the ground.
- Understand that there will be serious consequences for mishandling food/garbage that attracts animals.

4.2 BEAR MONITOR RESPONSIBILITIES

In addition to the responsibilities all workers share, dedicated bear monitors will be maintained on location to look for and identify evidence of bear presence in the project vicinity. While human safety is the top priority, it is vitally important to emphasize that early detection and avoidance measures are equally designed to prevent encounters that might result in harm to humans and bears, and the early detection of bears is one of the bear monitor’s major duties.

Upon finding bear sign or sighting a bear, bear monitors will notify the on-site Security Supervisor. Bear monitors will also be assigned to continually watch a bear while it is in the project vicinity. Project personnel will be instructed to report any bear sightings or interactions

to the designated bear monitor and the on-site Security Supervisor. Bear monitors will investigate reports of bear tracks or bears on the pad, may be assigned to guard work crews, and may haze and deter bears if adequately trained (see Section 6, Deterrence and Hazing). They will also do routine safety checks, and be responsible for maintaining the daily log (see Section 9, Polar Bear Reporting and Record Keeping).

4.3 COORDINATION OF TASKS AMONG EXXONMOBIL GROUPS

Point Thomson has personnel from ExxonMobil as well as other contractors on-site. The overlapping areas of responsibility among these groups will be coordinated by the on-site Security Supervisor to achieve the most efficient approach to bear detection, worker safety, and minimizing impacts on bears. There is a need for clear understanding of everyone's duties and good lines of communication so incorrect assumptions are not being made about respective responsibilities. Such coordination will be facilitated by development of checklists for specific types of personnel, indicating responsibilities and procedures under different situations. This issue will be a key component of initial and ongoing bear safety training efforts.

5.0 SITE DESIGN AND OPERATIONS

ExxonMobil will incorporate the following elements into the design and operation of Point Thomson facilities to minimize the impacts of activities on bears and to reduce risks to people:

- Early detection of bears in the area through a combination of site design, bear monitors, vigilant workers, and proper lighting.
- Minimizing attractants and eliminating rewards by using bear-resistant storage for food, garbage, and hazardous substances, incineration of wastes, backhauling unburnable wastes, and enforcing bans on littering and feeding wildlife.
- Clear roles and responsibilities to quickly report bears sighted near camp/work areas and an effective communication system to warn other workers of bears and direct appropriate responses.
- Authorized, well-trained personnel able to haze/deter bears in limited and necessary circumstances, using approved protocols.

5.1 DETECTING BEARS

ExxonMobil will use a combination of approaches to detect bears in the vicinity of its facilities and work sites. Detecting bears as early as possible provides the greatest number of options and safest scenarios.

Site Design and Layout: Basic design and layout considerations will help detect bears.

Sight distances in the more heavily traveled areas of the pads (e.g. between the main camp entrance and main access points to the drilling rig) will be maximized as practical to reduce chances of surprise encounters and ambushes.

Appropriate visibility will be maintained for the stretch of road leading to the pad (since bears often follow the path of least resistance and may walk up roads to facilities) as well as around dumpsters, incinerators, and sewage disposal units (odors might attract curious bears).

The site layout will attempt to avoid dead end corners and alleys. A bear could get trapped if it is spooked or hazed into a blind alley that does not have an escape route, or a bear could corner a worker there.

Lighting Systems: Bright lighting may have a deterrent effect on a wary bear but more importantly, bright lighting increases the chances that workers will see a bear if one is near. High use and potentially hazardous areas (doors, outdoor work areas, food/garbage storage sites, parking areas, dumpsters, incinerators, and other heavily used areas) will be properly illuminated during periods of darkness. Although lighting will assist workers in seeing bears that may be within the immediate area, these lights may not help spot distant bears; thus outdoor work areas may be provided with additional lighting as considered necessary. Lighting will be directed downwards to prevent light emissions upwards and outwards that may be attractive to birds during inclement weather.

Building Exits: The main camp entrances and other high traffic doors will be equipped with steel cages that provide a safe area to protect exiting workers. Exterior doors will be kept closed to prevent curious bears from entering buildings. Windows or CCD cameras may also be used on some doors to help detect bears outside them.

Vigilant Workers: ExxonMobil recognizes that observant workers and bear monitors are among the best ways to detect bears and are a crucial part of early detection efforts. Worker awareness will be stressed in environmental briefings, safety meetings, posters, and other ways to continually reinforce the need for vigilance. Sightings by heavy equipment operators, security, and other personnel who spend a lot of time working on the pad will also help locate bears. Sighting information will be communicated to all personnel.

Bear Monitors: Bear monitors will be employed and trained to watch for approaching bears and monitor their movements when they are near facilities and work crews. Bear monitors will be deployed to allow for continuous coverage. Work schedules and standard routines will be adjusted as necessary to minimize fatigue and help make bear monitors as effective as possible. The best lookout locations for bear monitors will be assessed on a continuous basis as the facilities expand and sight lines change.

Perimeter Sweeps: Bear monitors and security will regularly patrol the perimeter of the facilities scanning for bears and looking for bear sign. They will scan for bear tracks in the snow or ground, and any tracks will be reported to supervisors and investigated to ensure that the bear is not hidden somewhere on the pad.

5.2 LIMITING BEAR ACCESS

A concerted effort will be made at the facilities to limit bear hiding places.

All buildings will either be placed on the pad or on insulating material, or if raised, they will be skirted (e.g. with chain link fence) to prevent bears from using areas underneath as hiding places. Areas under stairs will also be designed using siding or chain link fencing, e.g., to exclude bears.

At Point Thomson, whenever practical, materials and equipment will be stored in ways that minimize potential hiding/ambush sites, such as packing things close together and capping pipes with a diameter greater than 30 inches.

Enclosed walkways will be employed, where practical, to minimize outdoor foot traffic. Gates at the foot of some stairways may be installed to discourage a curious bear from exploring the stairs.

Reinforced stout doors that open outward and automatically close will be installed, especially for kitchen and dining rooms. The importance of keeping any doors that bears can access closed will be emphasized.

5.3 BEAR-RESISTANT STORAGE

Hazardous materials that could pose a threat to the health and safety of polar bears (such as glycol, lubricants, motor oil, fuel, and drilling mud with hydrocarbons) will be stored so bears can not contact them (e.g. inside buildings, sheds, connexes, drums, locking steel containers). Secure bear-resistant storage methods will also be used for handling food and garbage.

5.4 FOOD AND GARBAGE MANAGEMENT

ExxonMobil is committed to preventing wildlife from obtaining any unnatural food or garbage at Point Thomson. This is an extremely serious issue. Bears that learn to associate human activity with a possible meal are not only potentially dangerous, but are also at greater risk of getting killed in other areas. Securing food and garbage and enforcing the feeding ban are among the best ways to reduce encounters and conflicts, and are also relatively easy to achieve at a controlled, remote development such as Point Thomson. Preventing bears from developing bad habits is a priority.

At Point Thomson food will be kept inside buildings and only permitted in vehicles/watercraft/aircraft in containers that minimize odors, for short periods, when workers are unable to use the dining facilities. Food (other than survival gear) or refuse will not be left in parked vehicles or aircraft after a shift is over, and will be disposed of properly.

Scrap metal and other non-bear-resistant dumpsters on the pad will be kept free of food waste.

Incinerating food and garbage is one of the best ways to eliminate the problems associated with their disposal. The camp will have a small, batch process garbage incinerator to reduce and minimize solid waste that would require off-site transport and disposal. Any food wastes that could attract wildlife will be incinerated daily on-site or stored temporarily in enclosed containers. Any non-burnable trash will be stored in enclosed containers and periodically backhauled to the North Slope Borough (NSB) landfill in Prudhoe Bay.

Food waste includes used cooking oil (which will not be treated as oily waste) and containers that have been used for food and beverages (lunch sacks, paper plates, Styrofoam containers, plastic utensils, etc.). All of these items can contribute to bear problems if not disposed of properly.

ExxonMobil has a zero tolerance policy for feeding wildlife. Any worker caught feeding wildlife will be removed from the project. There will also be serious consequences for carelessness with food disposal and garbage. Personnel will be reminded regularly that they should not litter,

leave any uneaten foods in parked vehicles or pickup truck beds, throw garbage in scrap dumpsters, or pour out unfinished drinks on the ground.

5.5 SEWAGE AND WASTEWATER

Sewage and wastewater odors are potential attractants to bears. There have been instances of property damage and injury associated with improperly handled waste. The camp will be equipped with a wastewater treatment plant. Sewage sludge will be incinerated on-site regularly.

5.6 SNOW REMOVAL

If possible, snow will be kept cleared away from around buildings and fences and large berms that could conceal bears will not be created where they could pose a safety issue. The prevailing northeast winds will be taken into consideration when the site is laid out and when the snow removal plan is developed.

5.7 BEACHED CARCASS REMOVAL

Carcasses of marine or terrestrial animals may wash up onshore near facilities and attract bears, creating a safety hazard. Depending on the type of animal involved, ExxonMobil will contact the appropriate agencies (National Marine Fishery Service [NMFS], ADF&G, USFWS) and request that they move or dispose of the carcass as soon as possible or authorize ExxonMobil to do so. Depending on the size and condition of a carcass, it may be towed offshore to be carried away by the current or removed in some other way. ExxonMobil will follow the protocols of the responsible agency for dealing with beached carcasses to prevent them from attracting and feeding bears near the facility. Records of any such actions will be kept and provided to appropriate agencies.

5.8 REGULAR MAINTENANCE AND SAFETY CHECKS

Safety/security personnel will be responsible for checking that all mechanical, structural, or electronic elements of the bear alarm system are functioning properly. This will include checking the bear alarm, the bear-resistant storage containers, and access controls (doors, cameras, cages, and gates) to make sure they are functional. Bear monitors will use a checklist approach to record the status of inspected items. The bear monitor will report any problems to the appropriate maintenance staff, as well as make sure bear-accessible doors are not propped open, and scrap metal dumpsters are not being used for any food wastes. The bear monitor will also investigate any unusual activity by birds, foxes, or ground squirrels, which can indicate people feeding wildlife or being careless with food/garbage. A quick response to stop food/garbage mishandling is critical.

5.9 COMMUNICATIONS/BEAR WARNINGS

ExxonMobil has clear communication protocols for bear encounters. Good 2-way communication among all personnel on-site is an essential part of safely working in bear habitat. Every worker must notify the bear monitor, security, or supervisors when they see a bear or bear tracks. Supervisors and bear monitors will warn the camp and workers/crews of a bear's

location and communicate with them regarding what actions to take as well as when it is safe to resume work. The Point Thomson facility has a bear-specific alarm to alert workers on the pad that a bear is around and they need to seek safety inside. It consists of three blasts of an air horn or vehicle horn and is, similar to a locomotive. During their site orientation, workers will be briefed so they are aware of the bear alarm, how it sounds, and the need to seek a safe retreat when it sounds. Other approaches for providing bear warnings will also be used such as radios and intercoms and flashing lights on exit doors when a bear is known to be on the pad.

6.0 DETERRENCE AND HAZING

ExxonMobil staff and contractors will operate under LOA stipulations that authorize designated personnel to deter bears away from facilities and areas of human activity under specified conditions. The goal of all deterrence will be to keep both people and bears safer by discouraging a bear from displaying adverse behavior (such as approaching facilities or workers, or getting into food and garbage). The major strategy is hazing – a form of deterrence to get a bear to move away, usually from work sites and facilities. It is in the best interests of human and bear safety for bears to keep their distance. Individuals authorized to conduct bear deterrence will receive specialized training offered by, or approved by the USFWS. The following sections describe the procedures for active deterrence and hazing of bears by authorized personnel.

6.1 BEAR DETERRENCE TRAINING

It is crucial to have well-trained individuals perform deterrence activities. USFWS Marine Mammals Management or ADF&G personnel will provide the training. A third party contractor may also be authorized if the training content is consistent with agency courses and the trainer is approved by the agencies. Training for authorized hazers will occur annually. Designated hazers will be firearms qualified and familiar with the capabilities and limitations of the tools. Practice with actual deterrents is crucial and will be included in all classes.

Deterrence Training will include the following topics:

- Regulatory issues: MMPA/ESA, “take,” LOAs
- The Polar Bear and Wildlife Interaction Plan
- Basic natural history of polar and grizzly bears
- Behavior of polar and grizzly bears
- Preventing bear conflicts
- Hazing/deterrence principles
- Capabilities and limitations of deterrents
- Hazing/deterrence techniques and protocols
- Scenarios
- Accountability/reporting requirements
- Field training practice session with the actual deterrents
- Report writing and required forms

6.2 HAZING/DETERRENCE PRINCIPLES

1. Deterrence works best when other preventative strategies to keep bears from obtaining food and garbage rewards are successful.
2. The effectiveness of deterrents is a function of whether or not the bear has been rewarded for a behavior in the past, and how strong its motivation is. The most difficult animal to deal with is a very hungry, determined bear that has repeatedly gotten into food and garbage previously at a site. The easiest animal to deal with is a curious, somewhat wary bear that has never been previously rewarded by food associated with human activity.
3. Deterrent efforts also benefit from good detection efforts. Early detection of a bear's approach or presence permits more preparation time and provides more options for deterrent actions.
4. The best scenario is to be prepared to use deterrents, but to not have to use them, letting a bear move on by the facility or through the area on its own while being monitored.
5. Deterrents should be used only for very specific, approved objectives and should never be used unnecessarily or out of frustration.
6. When and where deterrents are used will be determined by stipulations of the LOAs, established protocols, and the best judgments of the designated hazers. All other options will be pursued before resorting to deterrents unless otherwise specified.
7. If a bear in a non-emergency situation is to be hazed, the least intense methods will be used first.
8. Finesse is usually better than excessive force – just making a curious bear think twice about approaching people or entering facilities by moving a vehicle toward it may be enough to discourage it.
9. Restraint in resorting to deterrent rounds and more serious tools is important. The desired result can often be obtained by less intensive methods.
10. There is no perfect deterrent, but there are many options and usually a combination of techniques used by a well-trained hazer with understanding of bears works well.
11. Effectiveness of deterrents varies with conditions/context.
12. Overuse of deterrents can decrease their effectiveness. Bears will get used to most deterrents if repeatedly exposed to them. This is especially true of noises, but is also true of rubber bullets.

6.3 HAZING/DETERRENCE TOOLS AND TECHNIQUES

Hazing and deterring a bear basically involves trying to prevent the bear from some activity or getting it to move away by intimidating or frightening it. In the context of this project, it should be done either visually, with sound, or with a small amount of physical pain. Details about the advantages and limitations of the various deterrents will be covered in training sessions for hazers.

One way to intimidate a bear is visually with size and movement. Generally a bear perceives large size and movement towards it as assertive/dominant. Moving towards a bear with a large piece of equipment is often enough to haze it. Vehicles, heavy equipment, snowmobiles, and helicopters can all be used to haze bears.

Noise is another way to intimidate or frighten a bear into moving away. Depending on the situation air horns, sirens, firecracker shells, even yelling or clapping can haze a bear, at least for a short time. Making noise with construction equipment as you haze a bear can also be effective but bears can quickly get used to, and start to ignore noises.

Physical pain either from a chemical irritant such as bear pepper spray or from getting hit by non-lethal ammunition such as a 12 gauge beanbag, is another good way to dissuade a bear from approaching or frequenting facilities.

Bear pepper spray is a good close-range deterrent in the right circumstances but the canisters may not work well when cold.

Thumping a bear with a non-lethal round works well because bears are not used to random physical contact and hitting a bear with one of the projectiles can be a good way to get a reaction from the animal, especially from a wary, non-food-conditioned bear. However the effectiveness also may decrease with repeated use and it is difficult to provide enough punishment to dissuade a highly motivated, determined bear from food rewards.

At Point Thomson, where attractants are minimized and food and garbage carefully controlled, hazing a bear should often be accomplished as easily with a vehicle or piece of heavy equipment as with cracker shells. If vehicular hazing is ineffective, more intensive deterrent tools can be used.

6.4 DETERRENTS TO BE KEPT ON-SITE

1. A 12 gauge shotgun used for both deterrence and protection. If not being used in hazing, the shotgun will be carried loaded with a lethal round (slugs) as the first option to fire.
2. Twelve gauge deterrent rounds such as "bean bags" and cracker shells. Cracker shells should only be fired away from the pad and caution is necessary in dry conditions to avoid starting a tundra fire.
3. Bear pepper spray.
4. Long range acoustic device (LRAD) (acoustic deterrent - if it is decided to acquire one for the Project)
5. Small air horns.

Firearms and deterrents will be stored in a locked cabinet within the guard shack, and their use limited to authorized bear hazers.

6.5 BEAR BEHAVIOR AND DETERRENCE

A hazer who understands bear behavior and knows about the type and strength of a bear's motivation will be much better at using deterrents successfully.

Bears are not territorial. They have personal space and use a pecking order to share resources. The more dominant animals can access areas first and less dominant bears work around them. Bears will defer to more dominant animals and try to avoid conflicts with larger, stronger bears. That tendency can be used in hazing efforts. If a bear does not know the status of another animal it bases its reaction on whether or not that animal's behavior is perceived as that of a dominant animal. The behavior of hazers should communicate dominance to bears even before they use deterrent rounds.

Bears also react differently if they are outside their normal comfort zone. Meeting a bear in the middle of its natural habitat creates a different dynamic than if you encounter it when it has entered a relatively unfamiliar human zone.

Bear encounters at Point Thomson will often be with animals that are entering or are on the edge of "human habitat", often just out of curiosity of the strange activity or following interesting smells. Those bears should be somewhat wary and more tentative in their approaches. Such bears should react cautiously and retreat if something large, such as a vehicle or piece of heavy equipment, moves towards them. This is especially true of naïve animals that have not had the chance to get accustomed to equipment noise and activity. The exception is an extremely hungry, desperate bear that will probably require serious efforts to chase off.

See Appendix D for Protocols for Bear Hazing.

7.0 ICE ROAD/OFF-SITE OPERATIONS

Reducing the risk to on-site workers and to bears also applies to off-site operations such as surveying, ice road construction, hauling operations, and barge operations. ExxonMobil will construct and operate a sea ice road from the Endicott causeway to the Point Thomson Central Pad and several onshore ice roads. The route of the sea ice road is shown in Figure 1. This route was chosen to meet the ice road needs of staying close to the coast to avoid deep waters while at the same time avoiding the areas with the highest probability of encountering polar bear dens.

While ExxonMobil is the only company operating at Point Thomson, other companies may be conducting operations in proximity to ExxonMobil's ice roads. This could include other companies that use the ice roads in a shared fashion, companies that cross the ice roads, and companies that operate ice roads in the same general area. In all cases, ExxonMobil will endeavor to cooperate with other companies in the area to reduce the impacts of the individual or combined operations upon polar bears. This will include posting security guards to control access to the ice road at all points of entry and pursuing agreements to allow reciprocal use of the roads in the event a polar bear den(s) is detected within the area impacted by the roads.

If more than one ice road is constructed, a Joint Use Letter of Understanding will be pursued for companies' (BP, ConocoPhillips, Savant, etc.) mutual agreement that if a polar bear den is found on one operator's road, that company can use the other operator's road, provided that they comply with the other operator's road use rules. A bear manager (security personnel) will be named as the single point of contact regarding bear issues for all companies operating on

that road. Regardless of which road ExxonMobil workers are on, they will comply with ExxonMobil protocols.

7.1 BEAR INTERACTION PROCEDURES

When possible, personnel will work in teams of two or more. This will allow for one person to look for bears while the others perform tasks since it is extremely difficult to complete work and watch for approaching bears at the same time. If exceptions to this rule are made, careful consideration must be given to ensure that worker safety is adequately addressed. For example, a bear cage may be an option for a one-person ice melting operation where the door to the building is often propped open due to the high heat inside. In some cases, an armed bear monitor will be assigned to accompany work crews.

All off-site work requires extra caution and vigilance to avoid bear encounters because there is a greater chance of an undetected bear away from more developed sites. Off-site workers and bear monitors must be constantly alert to prevent a surprise encounter. Attentiveness is even more critical during darkness, foggy conditions, blowing snow -- any situation that decreases the ability to detect bears. One person will always watch for bears while others are working.

INTERACTION PROCEDURES:

1. Before initially working at a location, scan the surrounding area for evidence of bears. Use vehicle headlights or spotlights to scan the area if it is dark. Check with the bear monitor to make sure no bear sign has been reported. Aircraft can be useful for spotting bears. Helicopters, if practical, can circle and check for bears before dropping off crews at work sites. However, aircraft on routine flights that spot bears will not make low passes for better looks or to take photos. This stresses the animals and is illegal. The surrounding area must be free of bear prior to initiation of work.
2. The designated bear monitor will maintain watch from the perimeter of the work location(s). Work crews at locations removed from the main work crew will maintain radio contact with the bear monitor. All work crews will maintain a safe retreat area such as a building or vehicle at each work site.
3. Take no food outdoors to avoid attracting bears.
4. In the event a bear is sighted, retreat to a secure location such as a building or vehicle. Report all bear sightings to the designated bear monitor and on-site supervisor as soon as it is safe to do so from a secure location. Do not remain in an unsafe situation to view or photograph a bear.
5. Look outside before leaving any vehicle or building.
6. Use good judgment.
7. If near a snow machine or vehicle and a bear approaches, start the engine and rev it to make the bear aware of your presence. The noise will often cause the bear to move away. Report the encounter immediately.
8. If a bear is seen while in an exposed area, DO NOT YELL OR RUN, a bear cannot be outrun! Back away slowly towards a safe retreat keeping your eyes on the bear. If the bear is approaching, it can be distracted by dropping something such as an item of

clothing. If attacked by a bear, fight back with anything at hand, as hard as you can, concentrating on the bear's face and nose.

9. Use at least two vehicles if practical when traveling off-site so that, if one breaks down, the second can be used to shelter or transport all personnel to safety rather than having individuals walk long distances.

10. In case of a vehicle breakdown, call for help rather than walking back.

BEAR ACTION LEVELS:

Level 1. Level 1 will be maintained during all field activities and will include the following standard bear avoidance techniques:

- Dedicated bear monitor(s)
- Control of food and food wastes
- Report observation of any tracks, and
- Appropriate lighting of work areas.

Level 2. Level 2 will become effective immediately upon the sighting of a bear. Level 2 response actions will include the following:

- Temporary stoppage of work to inform all personnel, especially the Site Security Supervisor if the work is on an ice road (see Section 7.3 of this document for additional procedures concerning bear dens along ice roads).
- Assessment of the situation by the field supervisor and the bear monitor or on-site security person.
- Resumption of work with a minimum of two (2) dedicated bear monitors or elevation to action Level 3; and
- Notification of appropriate agency and ExxonMobil Environmental and Regulatory personnel.

Level 3. Level 3 will be implemented if a bear is considered a potential or real threat to personnel. Level 3 actions will include all of the following:

- Complete stoppage of work.
- Retreat to safe observation areas such as a vehicle, building, heavy equipment cab, or other protected areas.
- DETERRENCE BY AUTHORIZED INDIVIDUALS.
- Continued observation until the bear has safely left the area.
- Notification of appropriate agency and ExxonMobil Environmental and Regulatory personnel.

7.2 DEN DETECTION TECHNIQUES

During the winter, denning bears should not be disturbed. Although adult males and non-pregnant females may briefly den up during a storm, they do not spend the winter in dens. Pregnant females, however, enter dens in mid-November to mid-December to give birth and nurse cubs until they emerge around early March/mid-April. Because of the potential

seriousness of disturbing pregnant female bears, or females with newborn cubs, ExxonMobil is committed to locating and avoiding as many dens as possible.

In the Beaufort Sea, polar bears den along coastal bluffs, riverbanks, and barrier islands that accumulate snowdrifts, as well as on the sea ice. The great majority of polar bear maternity dens are within 10 kilometers (km) of the coast.

Ongoing winter activity when a bear is looking for a place to den would likely cause the bear to den far enough away from the activity/noise to not be bothered by it, the distance being a function of the individual bear's tolerance for disturbance. However, if a bear dens in an area with minimal or no activity and that area subsequently gets busier and noisier with development activity, the bear cannot avoid the disturbance unless it leaves the den and cub abandonment could result.

The Point Thomson area, nearby barrier islands, and the coastal routes for ice roads all contain suitable bear denning habitat. ExxonMobil, prior to construction of the ice roads, will conduct surveys to identify as many occupied bear dens as possible. Locating polar bear dens in areas where winter work will be taking place is an important task. There is no system that is 100 percent effective at finding all bear dens, but many can be detected. In order to do the best possible job, a combination of techniques will be used. An aerial Forward Looking InfraRed (FLIR) survey is the most effective and widely used technique but it can produce both false negatives (no indication a den is in an area when it is) and false positives (indication a den is in an area when it is not). Additional follow-ups, ground-truthing and consulting with agency personnel will be used to minimize these errors.

Timing of den surveys is critical. Den surveys ideally will be conducted after all the pregnant polar bears have denned, but ahead of ice road survey and construction. Finding good survey weather in the window between last den entrances and the start of ice road construction can be a challenge. Some bears may not enter dens until mid-December, yet activity related to the ice road could start prior to that. If work in potential denning habitat begins before all bears are in dens, an early survey will be conducted where the activity will first occur. This will be followed by another later search for dens in the same area after all bears should be denned up. There will need to be some flexibility in the actual approach because of yearly variability in weather, timing of ice road work, and other logistics. Detecting and avoiding all occupied bear dens will always be the goal. ExxonMobil will employ experienced FLIR operators to conduct the surveys. ExxonMobil will have a dedicated FLIR unit and helicopter available to take advantage of the conditions needed to do the surveys. ExxonMobil will coordinate FLIR surveys with other operators and will work with suppliers to make any FLIR equipment under ExxonMobil's control available to other operators.

ExxonMobil is committed to using the best available methods to detect occupied bear dens along proposed ice road routes and other areas of concern. The USFWS will be consulted on an ongoing basis during planning and construction of the ice roads and is welcome to participate in all phases of field operations including conducting FLIR surveys and during any bear den response actions. ExxonMobil will also consult with other producers working in the same area to coordinate on FLIR survey coverage and results. ExxonMobil will cooperate with USFWS to most effectively conduct den surveys. Prior to the start of the FLIR operations,

ExxonMobil will work with the USFWS and other operators to hold a workshop to share and refine best practices to be employed in the field.

Detection efforts will use a combination of techniques including:

1. United States Geologic Survey (USGS) satellite-collared bear locations in the project area, especially those of the den sites of radio-collared bears;
2. Denning habitat maps and the USGS online polar bear den database, <http://www.absc.usgs.gov/dataproducts.htm>;
3. FLIR technology available for den detection: aerial surveys under suitable conditions as possible using FLIR mounted on rotary aircraft with experienced operator (and agency participation when possible and review of the tapes afterwards);
4. Additional ground-truthing with scent-trained dogs and hand-held FLIRs will also be carried out as necessary.
5. Providing training and directives to all field personnel to report any sightings of polar bears or polar bear tracks, especially along the ice road away from the Central Pad.

When a polar bear den is identified, the USFWS will be notified in accordance with the approved LOA and the road will be re-routed as necessary to maintain a 1 mile buffer unless otherwise approved by the USFWS. Approval for such routing will be addressed via the Land Use Permits.

In areas with known dens, a flight altitude of at least 1,500 feet will be maintained for all aircraft within 1 mile of an occupied den, and when conditions do not permit flying at or above this altitude, the pilot will alter flight paths to avoid flying within 1 mile of the den. ExxonMobil has designated a helicopter flight path between Deadhorse and Point Thomson that avoids the coast and this will reduce the chances of disturbing polar bears.

7.3 CONTINGENCY PLAN FOR ROAD CLOSURE

ExxonMobil will implement the following action plan for an emergency response in case an undetected polar bear den is discovered close to industrial activity. One of the highest risks for accidental den disturbance is along ice roads. A bear may den in a remote area, but then be faced later in winter with construction noise and activity that it can only avoid by fleeing its den. An immediate response to den disturbance is critical. A rapid, careful, coordinated response lessens the chance of den abandonment. Quickly stopping activity that could disturb a dened bear is a critical part of the plan. Once a den is discovered all of the restrictions of the LOA will apply.

ExxonMobil's emergency protocols, as well as coordination and communication among the users and USFWS (including a single point of authority/contact on the industry side – the "Site Security Supervisor") are listed below. All users of ExxonMobil's ice roads will be required to follow these protocols. Contingency plans to conduct activities in case of an extended ice road closure (up to 3 weeks) between March 1 and April 15 will also be adopted.

All workers using the ice road will be briefed on the importance of not disturbing denning bears, of remaining vigilant for bears and signs of dens, as well as the procedures for reporting sightings and be required to sign a statement confirming their understanding of these protocols. They will also be informed of the emergency road closure protocols so they know what to

expect. Contingency plans for getting delayed on the opposite side of the closure will be explained. ExxonMobil will stress that not reporting a bear den for fear of road shutdown is unacceptable, and that early den detection and response is in the best interests of the project.

All primary supervisory, security, environmental, and safety personnel involved with the ice road will be trained prior to the start of ice road construction in the emergency response protocols, and will clearly understand what their responsibilities are.

Radios (with satellite phones as backup) will be used to ensure proper communication between on-the-ground workers, ExxonMobil and contractor supervisory staff, and agency personnel.

Appendix E outlines the emergency response to the discovery of a den/suspected den near the ice road or other industrial activity, and Appendix F shows the protocols for road closure.

8.0 OIL SPILL RESPONSE PLANS

From a polar bear perspective, a rapid response coordinated with state and federal agencies is critical. In the event of an incident involving the release of oil, ExxonMobil will promptly proceed in:

- 1). Preventing bears from getting oiled; detecting bears in the vicinity of any spill, and trying to keep them away from contact with the oil using trained bear monitors to haze bears from areas with oil, or possibly as a last resort, agency personnel to capture and relocate bears.
- 2). Ensuring the safety of oil spill response crews by using dedicated bear monitors for all operations.
- 3). Responding to oiled bears; agency or appropriately trained and authorized contractors to capture and either clean.

Further measures detailing response can be found in ExxonMobil's Oil Discharge Prevention and Contingency Plan (C-Plan). The plan will be maintained on-site when drilling begins and at any time that there is more than 10,000 barrels of fuel on location. Information related to immediate response actions, receiving environments, spill cleanup mobilization response times and well control will be contained in that plan. ExxonMobil is a member of Alaska Clean Seas (ACS) and plans to use ACS as a Primary Response Action Contractor.

Nabors Alaska Drilling holds a Spill Prevention Control and Countermeasure (SPCC) plan for their drilling rig equipment and facilities. Additional SPCC requirements will be required of and handled by other responsible construction contractors.

9.0 OTHER WILDLIFE INTERACTIONS

Encounters with animals other than polar bears will likely occur. These include several species of birds, foxes, caribou, and grizzly bears. Issues relating to food and garbage management and the feeding ban apply to these animals as well. Dead or injured animals, or any seemingly unnatural behavior will be reported immediately. No attempt should be made to capture or

handle animals. ExxonMobil will exclude birds/wildlife from temporary drilling waste storage pits with bird netting when liquids are present during non-frozen months.

9.1 GRIZZLY BEARS

Grizzly bears on the North Slope are the same species as brown bears in other parts of Alaska, although they are generally smaller because food is less abundant. Grizzly bears hibernate from September/October through April/May. Grizzly bears are potentially dangerous and should always be treated with caution. They are known to frequent the Point Thomson area. Grizzly bears are managed by ADF&G, and other than some legal/regulatory aspects, approaches for avoiding conflicts with polar bears and grizzlies are essentially the same.

Grizzly bears, like polar bears, have a keen sense of smell, can be curious, and are attracted to food sources. Once they find a food, they will often return for more. If they learn to associate humans with food, they will seek out human activity, increasing the chances of conflicts. If a bear is sighted, workers are to keep their distance, look around for other bears (cubs accompanying their mothers) and move to a secure location. Appendix B contains a grizzly bear sighting form to be filled out and submitted to ADF&G whenever a grizzly bear is sighted.

9.2 PACIFIC WALRUS

Walrus range throughout the continental shelf waters of the Bering and Chukchi seas, occasionally moving into the East Siberian Sea and the Beaufort Sea. During the summer months most of the population migrates into the Chukchi Sea. However, several thousand animals, primarily adult males, congregate near coastal haulouts in the Gulf of Anadyr (Bering Sea) and in Bristol Bay. Although the Central and Eastern Beaufort Sea are outside the normal range of the Pacific walrus, they have been sighted as far east as Kaktovik.

Pacific walrus are occasional visitors to the area rather than a common resident, and are not likely to be encountered along the barge route or at the PTU location. In the rare case of walrus traveling through the area, every effort will be made to avoid a “take”, as per the required stipulations in the Project LOA to be applied for and issued annually by the USFWS. Appendix C contains a Walrus sighting form to be filled out and submitted to USFWS whenever a walrus is sighted.

9.3 ARCTIC FOX/RED FOX

Both arctic and red foxes will be encountered in the area. Foxes are found on the North Slope year round. In late March and early April they begin to den and have kits. Creation of artificial den sites will be prevented wherever possible. If foxes are discovered digging a den or scouting den sites in pipe or stored equipment, the digging site will be filled in, pipes closed off or equipment moved to prevent any denning. It is important to find and discourage these activities early in the process before foxes create a den and have kits. Foxes are a major vector for rabies. These two species of foxes comprise about 85 percent of animals submitted for rabies testing in Alaska that test positive. Arctic foxes normally exhibit little fear of humans. However, they must never be fed and anyone caught feeding them will be removed from the Project site. Workers will keep their distance and report aggressive, unusually curious, or overly friendly foxes to the ADF&G (Dick Shideler, Contacts 13.0)

9.4 CARIBOU

Two main caribou herds - the Porcupine and the Central Arctic, inhabit the areas around Point Thomson. Caribou use the North Slope coastal plain in summer for calving and insect relief. Their calving season lasts from mid-May to mid-June. From early July to early August, caribou seek relief from mosquitoes near the coast and in elevated areas. If caribou move through the Point Thomson area, they will be given right-of-way and will not be approached or harassed. Caribou are an important part of the subsistence culture on the North Slope. The PTU area exists on the western edge of what has been a traditional area for subsistence hunting of caribou in the summer season by residents of Kaktovik. The proposed work will be discussed with local area residents to ensure that proposed work and the subsistence needs of Kaktovik do not conflict.

9.5 ARCTIC GROUND SQUIRRELS

Arctic ground squirrels are a common North Slope mammal. Hawks, owls, eagles, foxes, wolves and bears prey on squirrels. If a feeding ban is strictly enforced, and garbage is not available, squirrels are usually not a major problem around facilities. However squirrels can attract grizzly bears. If ground squirrel numbers on the pads and around the camp greatly increase, but there are no issues with food and garbage, a permit to trap them will be considered.

9.6 RAVENS AND GULLS

Ravens and gulls are present on the North Slope and may be seen at the PTU locations. They are scavengers that are often attracted to human developments but they are also predators on many other birds so it is important to avoid artificially increasing the populations of ravens and gulls. Typical attractors for ravens and gulls include food items and garbage. The restrictions on feeding and careful food and garbage handling should prevent these birds from becoming problems at PTU. In addition, ravens may try to nest at the facility, and efforts will be made to prevent this. ExxonMobil will discourage use of its telecom and weather towers, as well as other infrastructure as nesting sites for ravens. Ravens are strongly attracted to such potential nesting structures. Options to prevent nesting are limited to building towers in ways that attempt to minimize nest building, using scare devices to deter the birds when they land in places trying to nest, or knocking the nests down as the birds try to construct them (before they have a chance to lay eggs). As long as there are no eggs in the raven nest, it is acceptable to knock it down.

9.7 OTHER MIGRATORY BIRDS

In May, vast numbers of birds begin to return to the North Slope for the summer. Some species, such as spectacled eiders, are protected under the Endangered Species Act. Project field activities will continue through summer and nesting birds may be encountered. Should summer site preparation or other field work (other than surveys) occur prior to 15 July when most arctic nesting birds have hatched, the site and immediate vicinity will be searched for nesting birds by a qualified biologist prior to the start of work. If an active nest of a listed or migratory bird is found, the appropriate USFWS office will be contacted for instructions on how to avoid or mitigate the potential loss of the active nests. In addition, site workers will be made familiar with

endangered species identification and will report the occurrence of any brood-rearing female eiders within the project area to the supervisors who will notify the appropriate USFWS office and to ExxonMobil's Environmental and Regulatory group.

10.0 POLAR BEAR REPORTING AND RECORD KEEPING

Polar bear sightings will be recorded in a daily log. Bear monitors will complete and submit to the USFWS a polar bear sighting form for all observations made. Appendix A provides the USFWS Polar Bear Sighting Report and Polar Bear Sighting Report (Marine) Forms to be used as appropriate. These observations should be recorded any time a bear is sighted, when a bear enters the active work area, or when a bear is hazed. To the extent that safe observation permits, behavioral data will be collected. Project personnel who sight polar bears or polar bear sign such as tracks, will communicate the details to the bear monitor responsible for maintaining the log. To the extent available, the activity log will record observations such as group size, age, sex, reaction, duration of interaction, and closest approach. Data acquired will be made available to the USFWS as it is generated, and transmitted with field reports weekly. Actual time spent observing polar bears will be part of the journal record to assist biologists who are trying to collect accurate information for their studies. Reports will be sent to Craig Perham and Tom Evans USFWS Marine Mammals and Dick Shideler of ADF&G (see Section 11.0 Contact Lists below).

All hazing and deterrent actions must be reported immediately to ExxonMobil Environment and Regulatory person and then within 24 hours to the USFWS Marine Mammals Office.

11.0 CONTACT LISTS

The following contact list provides information for the individuals with responsibilities related to polar bear and wildlife interactions. This list will be checked and updated as necessary.

ExxonMobil Contact Personnel:

While different individuals representing ExxonMobil may interact with the USFWS during different stages of the development and implementation of the Polar Bear and Wildlife Interaction Plans, ExxonMobil's Security Advisor and his field On-Site Security Supervisor will be the designated single point of contact with the USFWS and other company operations during response to any polar bear incidents or events. Their contact information is:

Security Advisor: John Murphy, 907-564-3604 (office), 907-351-9774 (cell)

On-Site Security Supervisor: 907-564-3733

24-hour Anchorage contact number: 907-564-3633

The following lists additional ExxonMobil persons or positions related to the operations.

Name/Position	Office	Cell	Email
Brien Reep Environmental and Regulatory Manager	907-564-3617	509-851-8973	brien.reep@exxonmobil.com
John Wilkinson Compliance Coordinator	907-564-3784	908-601-8483	John.b.wilkinson@exxonmobil.com
Rich Greer Wildlife Specialist	907-564-3619	856-437-9088	Richard.greer@exxonmobil.com
Rob Dragnich Regulatory Advisor	907-564-3711	907-830-4796	rob.g.dragnich@exxonmobil.com
Phillip M Walsh Construction Manager	907-564-3680	307-799-5562	Phillip.m.walsh@exxonmobil.com
Bob Hill / Ron Kotarski Point Thomson Construction Supervisor	907-433-3530 907-670-1131	n/a	n/a
Gordon Eastling Deadhorse Construction Supervisor	907-659-2251	n/a	n/a

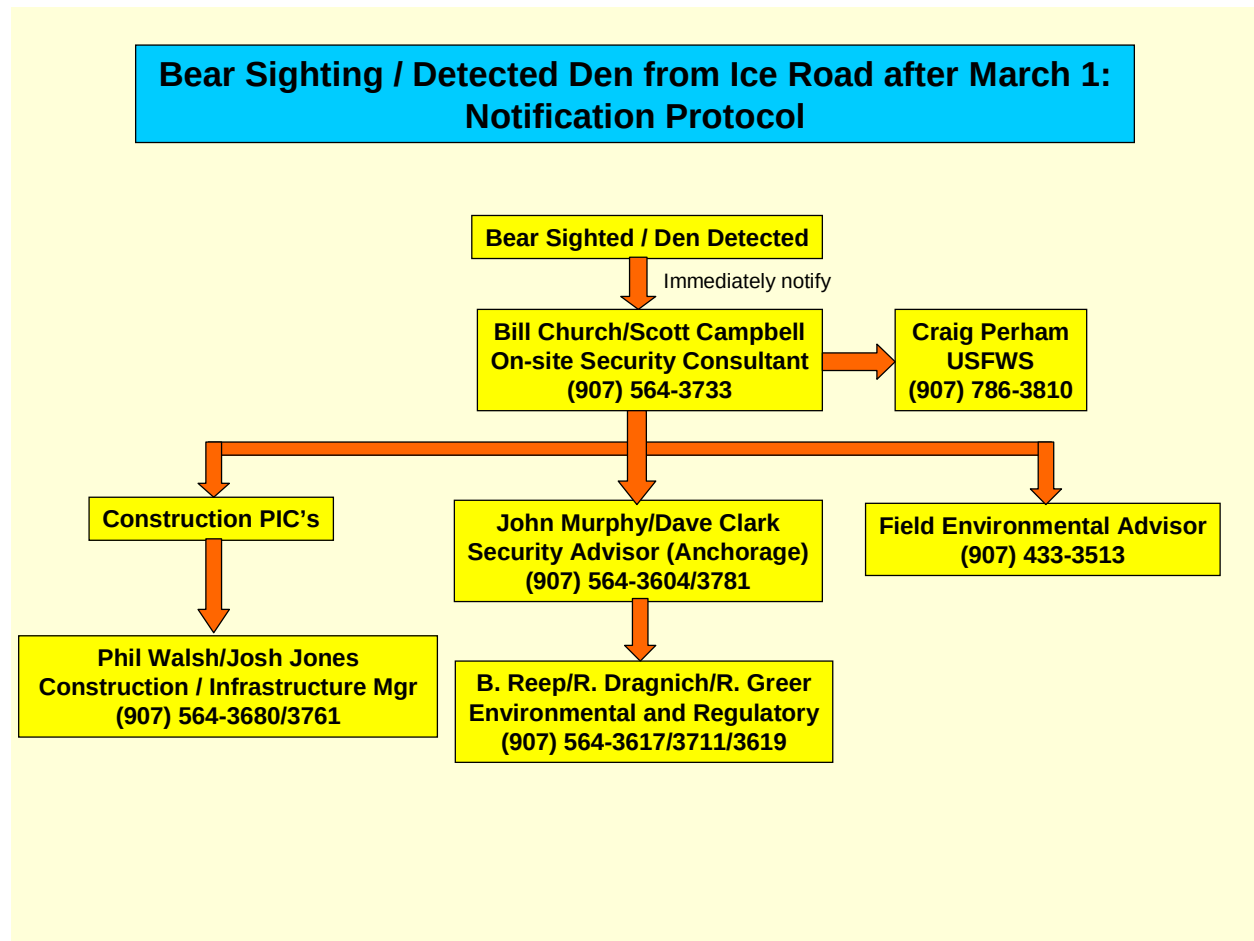
USFWS Marine Mammals Contacts:

Craig Perham USFWS – Marine Mammals Section 1011 East Tudor Road Anchorage, Alaska 99503 Telephone: (907) 786-3810 Fax: (907) 786-3816 Email: craig_perham@fws.gov	Susi Miller USFWS – Marine Mammals Section 1011 East Tudor Road Anchorage, Alaska 99503 Telephone: (907) 786-3828 Fax: (907) 786-3816 Email: susanne_miller@fws.gov
Tom Evans USFWS – Marine Mammals Section 1011 East Tudor Road Anchorage, Alaska 99503 Telephone: (907) 786-3814 Fax: (907) 786-3816 Email: thomas_evans@fws.gov	

Alaska Department of Fish and Game Contacts:

Richard Shideler
ADF&G – Habitat Division
1300 College Road
Fairbanks, Alaska 99701
Telephone: (907) 459-7283
Fax: (907) 459-7332
Email: dick.shideler@alaska.gov

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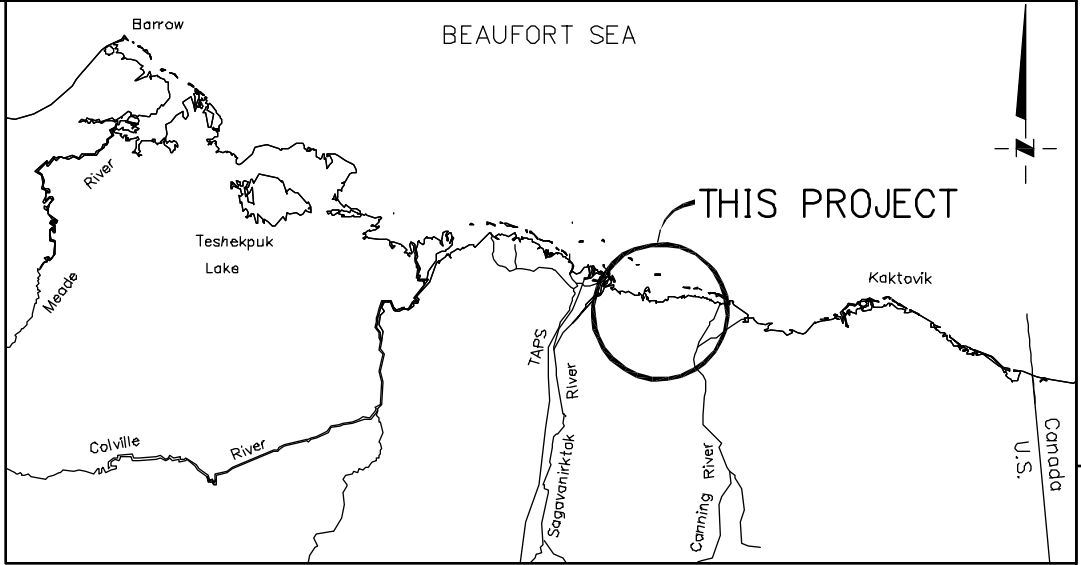
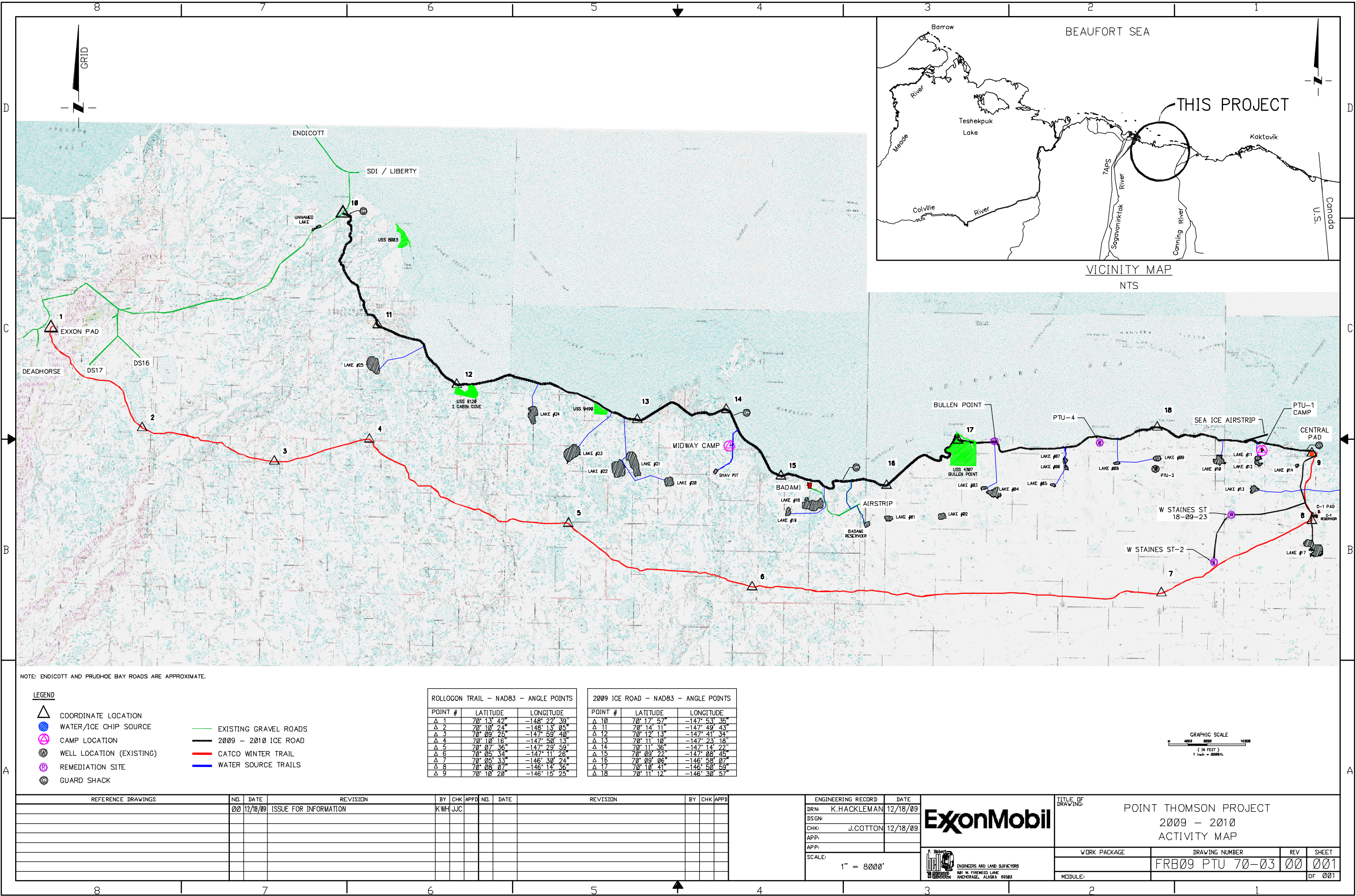


12.0 IMPLEMENTATION/EVALUATION/FEEDBACK

ExxonMobil will ensure that this Polar Bear and Wildlife Interaction Plan is being used at the site and that workers are familiar with it and its procedures. This document will be referred to and its contents reinforced at environmental briefings and other forums where safety is discussed to ensure it is understood and used by personnel at the site. ExxonMobil will also ensure that copies of this document are available on-site and will also provide laminated bear interaction summary cards.

Periodic hazard assessments and compliance checks will be performed. Site visits by Environmental and Regulatory staff to look at the operations in terms of bear issues will be conducted. Health and Safety on-site staff will use a checklist of plan components to ensure that the plan is being followed.

ExxonMobil will evaluate and revise the Polar Bear and Wildlife Interaction Plan yearly or as necessary. ExxonMobil will solicit from its employees and contractors suggestions to improve the plan and its procedures. Often the people most directly impacted by these plans can come up with better ways of achieving the goals. Lessons learned during the drilling phase will also be useful in reducing conflicts as the project progresses.



VICINITY MAP
NTS

NOTE: ENDICOTT AND PRUDHOE BAY ROADS ARE APPROXIMATE.

LEGEND

- △ COORDINATE LOCATION
- WATER/ICE CHIP SOURCE
- ⊙ CAMP LOCATION
- ⊙ WELL LOCATION (EXISTING)
- ⊙ REMEDIATION SITE
- ⊙ GUARD SHACK
- EXISTING GRAVEL ROADS
- 2009 - 2010 ICE ROAD
- CATCO WINTER TRAIL
- WATER SOURCE TRAILS

ROLLOGON TRAIL - NAD83 - ANGLE POINTS				
POINT #	LATITUDE	LONGITUDE		
Δ 1	70° 13' 42"	-148° 22' 39"		
Δ 2	70° 10' 24"	-148° 13' 05"		
Δ 3	70° 09' 25"	-147° 59' 40"		
Δ 4	70° 10' 16"	-147° 50' 13"		
Δ 5	70° 07' 36"	-147° 29' 59"		
Δ 6	70° 05' 34"	-147° 11' 26"		
Δ 7	70° 05' 33"	-146° 30' 24"		
Δ 8	70° 08' 07"	-146° 14' 36"		
Δ 9	70° 10' 20"	-146° 15' 25"		

2009 ICE ROAD - NAD83 - ANGLE POINTS				
POINT #	LATITUDE	LONGITUDE		
Δ 10	70° 17' 57"	-147° 53' 36"		
Δ 11	70° 14' 11"	-147° 49' 43"		
Δ 12	70° 12' 13"	-147° 41' 34"		
Δ 13	70° 11' 10"	-147° 23' 18"		
Δ 14	70° 11' 36"	-147° 14' 22"		
Δ 15	70° 08' 22"	-147° 08' 45"		
Δ 16	70° 08' 06"	-146° 58' 07"		
Δ 17	70° 10' 41"	-146° 50' 59"		
Δ 18	70° 11' 12"	-146° 30' 57"		



REFERENCE DRAWINGS	NO.	DATE	REVISION	BY	CHK	APP	NO.	DATE	REVISION	BY	CHK	APP
	00	12/18/09	ISSUE FOR INFORMATION	KWH	JJC							

ENGINEERING RECORD	DATE
DRN: K.HACKLEMAN	12/18/09
DSGN:	
CHK: J.COTTON	12/18/09
APP:	
APP:	
SCALE:	1" = 8000'

ExxonMobil

ENGINEERS AND LAND SURVEYORS
881 W. FIREWEED LANE
ANCHORAGE, ALASKA 99503

TITLE OF DRAWING			
POINT THOMSON PROJECT 2009 - 2010 ACTIVITY MAP			
WORK PACKAGE	DRAWING NUMBER	REV	SHEET
	FRB09 PTU 70-03	00	001
MODULE:	OF 001		

APPENDIX A: POLAR BEAR SIGHTING REPORT FORMS

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199
ON LAND POLAR BEAR SIGHTING REPORT

Date: _____ Observer Name: _____
Time: _____ Contact number/email: _____

Location_____

Latitude:_____ Longitude_____ Datum_____

Weather conditions: Fog_____ Snow_____ Rain_____ Clear_____ Temperature____F/C

Wind speed_____mph/kts Wind direction_____ Visibility: Poor
Fair
Good
Excellent

Number of bears:

_____ Adult M/F	_____ Sow/cub(s)
_____ Sub-adult	_____ Sow/yearling(s)
_____ Unknown	_____ Sow/2YO(s)

Estimated distance of bear(s) from personnel_____ (meters) and facility:_____ (meters)
closest point) (closest point)

Possible attractants present: _____

Bear behavior: _____

Description of encounter:_____

Duration of encounter:

Deterrents used/distance: _____ Vehicle _____ Bean bag _____ Other
 _____ Crackershell _____ Horn/siren
 _____ Rubber bullet _____ Spotlight/Headlight

Agency/Contacts:

USFWS_Craig Perham (786-3810) (FAX 786-3816)____ Time_____Date_____

ADF&G Dick Shideler (459-7283) (FAX 459-7332) Time Date

APPENDIX A: POLAR BEAR SIGHTING REPORT FORMS

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199
MARINE POLAR BEAR SIGHTING REPORT

Date: _____ Observer Name: _____
Time: _____ Contact number/email: _____

Location _____

Latitude: _____ Longitude _____ Datum _____

Weather conditions: Fog _____ Snow _____ Rain _____ Clear _____ Temperature _____ F/C

Wind speed _____ mph/kts Wind direction _____ Visibility: Poor
Fair
Good
Excellent

Number of bears:

_____ Adult M/F	_____ Sow/cub(s)
_____ Sub-adult	_____ Sow/yearling(s)
_____ Unknown	_____ Sow/2YO(s)

Estimated distance of bear(s) from vessel or location _____ (meters)

Bear behavior (Initial Contact): Curious _____ Swimming _____ Resting _____
Hunting _____ Walking _____ Other _____

Bear behavior (After Contact): Curious _____ Swimming _____ Resting _____
Hunting _____ Walking _____ Other _____

Description of encounter: _____

Duration of encounter: _____ **Possible attractants present:** _____

Agency/Contact:

USFWS-Craig Perham (786-3810) (FAX: 786-3816) _____ Time _____ Date _____
(craig_perham@fws.gov)

APPENDIX B: GRIZZLY BEAR OBSERVATION REPORT FORM

Please return to: Dick Shideler, Alaska Department of Fish and Game, 1300 College Road,
Fairbanks, Alaska 99701

BEAR ID# _____

OILFIELD GRIZZLY OBSERVATION FORM

OBSERVER _____ COMPANY _____

OBSERVATION DATE _____ TIME: Start _____ Stop _____

OBSERVATION FROMVEHICLE _____ GROUND _____ BUILDING _____ OTHER _____
OBSERVER DISTANCE FROM BEAR _____ METERS**GENERAL LOCATION**DEADHORSE _____ EOA _____ WOA _____ KUPARUK _____ MILNE _____
ENDICOTT _____ LISBOURNE _____ PT MAC _____ TAPS (mp#) _____**SPECIFIC LOCATION** [Example: 500 meters N of Spine Rd at Put R.] _____ METERS

_____ [Direction] OF _____ [Facility Name]

DUMPSTER PRESENT? _____ YES _____ NO _____ UNKNOWN**WEATHER** _____ F _____ Direction of wind _____ at _____ MPH
_____ Clear / Partly Cloudy _____ Fog _____ Snow**BEAR IDENTIFICATION** Earflag Color [note: right & left of bear, not observer]

_____ Right _____ LEFT NATURAL MARKINGS [scars, torn ears, etc]

OTHER BEARS PRESENT? _____ None _____ # of cubs _____ # of yearlings

_____ # of Other _____

BEAR ACTIVITY When first seen, the bear was _____ resting _____ traveling

_____ feeding (natural food) _____ feeding (garbage) _____ feeding/traveling

_____ Other (describe) _____

BEARS REACTION TO OBSERVER _____ Ignore _____ Approach _____ Avoid

Were other people in the area (i.e., not w/ observer) _____ Yes _____ No _____ UNK

Bears reaction to other people _____ Ignore _____ Approach _____ Avoid

REACTION COMMENTS _____

DETERRENCE ACTION TAKEN _____ Yes _____ No

If yes, did you use? _____ Horn _____ Siren _____ Plastic Slugs _____ Bean Bag

_____ Firecracker _____ Cracker Shell _____ Other (describe) _____

BEARS REACTION _____ Ignore _____ Approach _____ Withdraw**COMMENTS** _____

APPENDIX C: PACIFIC WALRUS SIGHTING REPORT FORM

United States Department of the Interior

FISH AND WILDLIFE SERVICE

1011 E. Tudor Road

Anchorage, Alaska 99503-6199

PACIFIC WALRUS SIGHTING REPORT

Date: _____ Observer name: _____
Time: _____ Contact number/email: _____

Location: _____

Latitude: _____ Longitude _____ Datum: _____

Weather conditions: Fog _____ Snow _____ Rain _____ Clear _____ Temperature _____ F/C

Wind speed _____ mph/kts Wind direction _____ Visibility: Poor _____
Fair _____
Good _____
Excellent _____

Total number of walrus: _____ Adult; _____ Sub-adult; _____ Unknown

Estimated distance (meters) of walrus(es) from location: _____

Walrus behavior (initial contact): Resting (hauled out) _____ Swimming _____ Other _____

Walrus behavior (after contact): Resting (hauled out) _____ Swimming _____ Other _____

Duration of encounter: _____ min or hour

Description of encounter: _____

Agency contacts/ Time of Contact:

USFWS: Craig Perham (907)-786-3810 (phone); 786-3816 (FAX)

Time _____ Date _____

APPENDIX D: PROTOCOLS FOR BEAR HAZING

1. Bear hazers must use good judgment about the situations where a bear can be shot with a deterrent round since it is not possible to provide rules to cover every situation. However, careful documentation and accountability for all deterrent rounds used will also be required.
2. Hazers must have a clear idea of what they are trying to accomplish, and make sure that it is appropriate and authorized by the agencies.
3. If a bear is observed moving towards the Point Thomson area, hazers will be prepared to deter but will first monitor it and give it an opportunity to pass by without any deterrence. Contact the security guard for back-up with lethal rounds.
4. An exhausted bear that swims to shore and rests will not be hazed, but given time to rest and recuperate, while being monitored.
5. If instead of passing through, a bear approaches the facilities or work sites, the bear's actions will be discouraged.
6. Start out with as low intensity as possible, and raise the level of response only to the degree that the bear is being stubborn.
7. Try using vehicles to move a bear before resorting to weapons. It may be relatively easy to move a bear off the pad with a vehicle or a piece of heavy equipment.
8. If the bear is sighted before it enters the drilling pad, employ any number of hazing options. Position a vehicle or piece of heavy equipment in its line of travel to cut it off. Use vehicle movement, horn, and possibly deterrent rounds as a last resort to turn it away.
9. If the bear is already on the pad, make sure everyone is in a safe spot before hazing a bear. For most scenarios it is better to wait until people have retreated to safety before hazing. A bear must not be hazed if there is a chance it might run into workers as it flees.
10. Make sure the bear has a clear route to go where you want it to go, and it is best to haze it towards an area it will want to go (e.g. towards the coast or the direction where it came from).
11. Make it as easy as possible for the bear to flee in desired direction, and try to first use finesse rather than large amounts of force and firepower.
12. The exception to the subtle approach is if, in spite of best efforts, a bear gets into food or garbage, the reaction should then be immediate: utilize equipment or bean bag shots. An immediate hazing response lessens the chance of a bear hanging out or returning.
13. The USFWS has approved the use of helicopters to haze polar bears under the following conditions:
 - Keep a distance of approximately $\frac{1}{4}$ mile between bear and helicopter, moving the bear in a direction away from people and facilities. It may be necessary to initially approach within the $\frac{1}{4}$ mile distance (but not

aggressively) to get the bear moving, especially if it's resting, and then back off to the ¼ mile distance.

- Push the bear at a steady walk. A running bear, especially large bears, can rapidly overheat.
- Don't haze a bear with a helicopter when ambient temperature is over 70°F (20°C).
- Don't aggressively push a bear. Bears may hunker down and not move if pushed or chased too aggressively. A slow approach is usually all it takes, especially if hovering near the ground creates a snow cloud due to the prop wash.
- Move the bear at least 2-3 miles from the point of initiation or occupied facilities, as a rule of thumb. This will depend on the situation – location of facilities, bear behavior, weather, and geographic features. The key element is to keep the bear moving on its own.
- Monitor the bear, if possible, to make sure the bear does not return.

The USFWS notes that these criteria are to be used for Bell 212 and 206 helicopters. If an R-44 helicopter is to be used, this helicopter may have to move in much closer to initiate the hazing because these machines are smaller and quieter than the former.

14. Whenever bears are hazed, immediate reporting is necessary.
15. If deterrent attempts fail, or a bear remains in the vicinity of the project location for a prolonged period, Mr. Craig Perham of the USFWS (907-786-3810) will be contacted for advice on deterring the bear from the work area. If Mr. Perham is not available, alternate USFWS contacts are Mr. Tom Evans (907-786-3814) or Susi Miller (907-786-3828, Anchorage or 907-640-6320, USFWS Kaktovik Bunkhouse). In addition to the USFWS, Mr. Dick Shideler of the ADF&G (907-459-7283) may be contacted and informed of the situation if no one from USFWS is available.
16. Every situation is a bit different and recruiting and training effective bear hazers is crucial. Bear monitors who can make good judgment calls about how much leeway to give a bear before initiating deterrence, who understand bear behavior and motivation, and who can get results with minimum force are most successful.

APPENDIX E: RESPONSE TO DETECTED MATERNAL DEN PROTOCOLS

The following protocols outline the initial response to the discovery of an active maternal polar bear den or suspected den when working on ice roads/pads or via cross country off-road travel away from existing infrastructure (e.g., facilities, causeways, roads, or pads):

1. All workers must be vigilant for any signs of an undetected den in their vicinity. This includes any sighting of polar bears, suspected dens, or tracks. If a bear, suspected den, or tracks are seen within a 1 mile buffer around the work or travel area (e.g. seismic activity, ice roads), or if an active polar bear den is discovered, the ExxonMobil Site Security Consultant will be notified immediately.
2. Upon an initial report of a bear, a suspected den, or tracks, the Site Security Consultant will dispatch a security or environmental bear monitor to try to determine if the bear is associated with a den or if the den is active using FWS protocols. They will also try to determine whether the site is greater or less than 1 mile from the ice road or area of activity. If it is determined that the site is less than 1 mile from the ice road or area of activity, the team will contact the Site Security Consultant, who will then make a radio announcement to security checkpoints and all vehicles on the road. Once authorized by the Site Security Consultant or designee, the team will begin monitoring the den while a formal response is initiated.
3. The Site Security Consultant or designee will immediately notify FWS about any confirmed or suspected maternal polar bear den. The Site Security Consultant or designee will be the single point of contact between FWS and the site workers or road users and will keep the FWS informed about the situation via phone and email contact.
4. If a bear is observed near an off-road work site or ice road between March 1st and April 15th, even if a den entrance is not seen, it will be assumed to be associated with a den until it is determined that the bear is not associated with a den. The Site Security Consultant or designee will immediately contact FWS and assign someone (or multiple staff members) from security or environmental staff to monitor the bear and immediate area.
5. The Site Security Consultant or designee will communicate with other user groups, company staff, and contractors about the situation and keep them informed of any developments. All user groups will comply with directions given by the company in charge of the site or road.
6. If an active maternal den is confirmed to be more than 1 mile away from the ice road or other activity, the den and bears will be monitored as directed by the FWS. A remote camera may be set up by FWS personnel, or their representative, to record activity at the den site.

7. If an active maternal den is confirmed to be less than 1 mile away from the ice road or other activity, the Site Security Consultant will immediately initiate a road closure under the direction of FWS.

APPENDIX F: ICE ROAD CLOSURE PROTOCOLS

The following protocol outlines how an ice road will be closed in the event that an active maternal den is confirmed to be less than 1 mile away from an ice road. These protocols recognize that vehicles already on the road may still need to pass through the 1 mile buffer zone to return to base camp. It is expected that all users of the ice road will be made aware of the maternal den and any closure activities by the company in charge of the ice road. Similarly, it is the responsibility of all road users to comply with the directions given by the company in charge of the ice road.

1. Mobile security monitor(s) will be positioned on the road near the den site as directed by FWS and the Site Security Consultant or designee, where practicable (i.e. unless weather or other safety concerns prohibit driving). Security will deploy these mobile monitor(s) as soon as is practicable and advise the Traffic Control Check Points on either side of the road to keep any new traffic from entering the road. Monitoring and traffic control check point staff will need to change out periodically for health and safety reasons (at least twice per day).
2. A 24-hour bear monitor/response team will be posted in a position that allows clear viewing of the den without disturbing it. A video camera may also be placed on the opposite side of the road by FWS or FWS designated representative to simultaneously record the den site and road activity, where practicable. The bear monitor/response team will:
 - a. Communicate with the guards at the traffic control points on both ends of the road.
 - b. Observe and log all traffic, as well as polar bear activity.
 - c. Immediately notify nearest security personnel and the Site Security Consultant of any polar bear emergence from the den.
 - d. Park vehicles in an area that allows clear viewing of the den without creating a disturbance or potential obstruction to the sea ice for the polar bears.
 - e. At least one bear monitor will remain at the polar bear den site until FWS determines a bear monitor is no longer needed. For health and safety reasons, bear monitors will change shifts as necessary.
3. The den location will be provided to non-commercial aircraft operators contracted or chartered by ExxonMobil with instructions to fly at altitudes above 1,500 feet if passing over the one mile buffer zone or to divert aircraft around the 1 mile den buffer zone.
4. Notification updates will be given by radio to all vehicles by the Site Security Consultant.
5. Road Closure signs and barriers will be placed at each traffic control point to prevent any access to the road. If approved by FWS, essential traffic (including essential traffic still on the pad needing to return to base camp) may be allowed to form a caravan of vehicles to get to the appropriate home side of the road. To avoid the risk of fracturing the road due to static load, vehicles will remain

approximately 100 meters apart. This caravan of vehicles will be escorted by security personnel designated to do so, and:

- a. all vehicles must maintain a maximum speed of 10 mph;
- b. no use of horns or other loud devices;
- c. no stopping or backing up;
- d. no photographs; and
- e. no road maintenance activities.

All other personnel or equipment needing transport will use either aircraft or an alternative land route, unless specifically given permission by FWS to do otherwise.

6. Any vehicle requesting limited access to the road during road closure will require explicit approval from the appointed Site Security Consultant (if practicable in consultation with FWS). Examples of limited essential traffic may include transportation of materials or personnel critical to process or personnel safety, environmental emergencies, or life-support equipment or medicines that can not access the remote site by other means.
7. If the ice road is shut down for an extended period and caravanning of vehicles is not approved by FWS, company staff and contractors will, depending on the exact site, timing and circumstances, re-route traffic, using a new ice road route, or employ tundra travel and/or airlifts to support activity at the remote location(s).
8. Guards at either end of the road, hired by ExxonMobil, will stop all traffic until given approval from FWS to re-open the road or caravan vehicles. The Site Security Consultant, or designee, will communicate with the FWS on the status of the female bear, cubs, maternal den site and any traffic at least two times per day or as needed unless FWS determines that it is not necessary. If a request is made to enter the road, only the Site Security Consultant can allow access to the road with permission from FWS. If FWS staff cannot be reached in an emergency situation, the Site Security Consultant is the only one who can allow access (with agreement from ExxonMobil Management).
9. It is the responsibility of ExxonMobil to ensure its road remains closed to all traffic and FWS is kept informed of the situation.
10. Contingency Plan for Continuing Operations:
 - a. Reinstate approved tundra travel program.
 - b. Immediately assess the need for ice road by-pass construction.
 - c. Increase use of air traffic for transportation use.
11. Only when FWS approves (in writing) re-opening of the road, such as when the sow and cubs leave the den permanently, will approval will be given to resume road use.
12. This document will be revised and updated as needed.